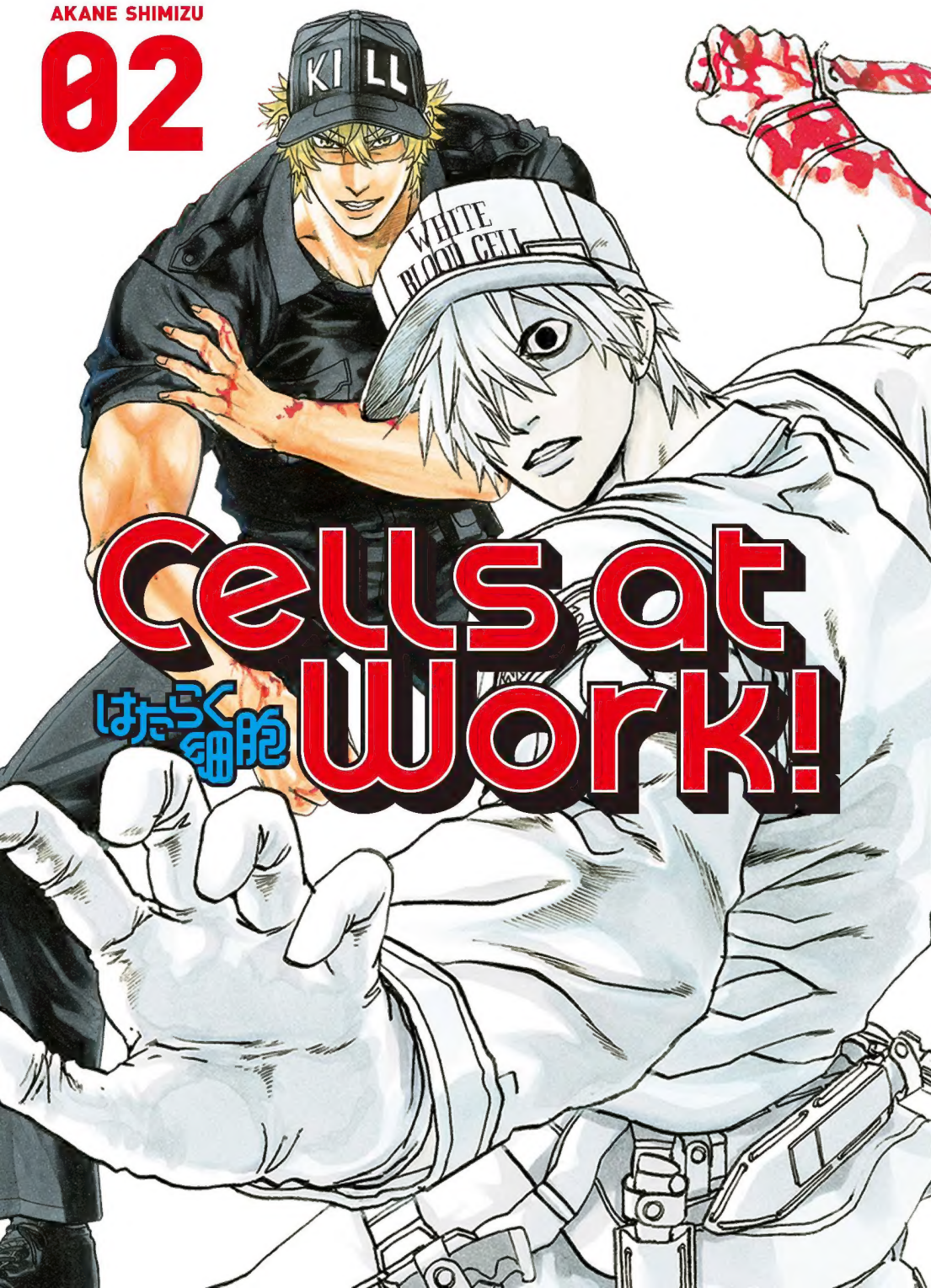


AKANE SHIMIZU

02



Cells at Work!

はたらく細胞

Cells at Work!

はたらく細胞



02

AKANE SHIMIZU

CONTENTS

Chapter 5	Food Poisoning	002
Chapter 6	Heat Stress	031
Chapter 7	Erythroblasts and Myelocytes	063
Chapter 8	Cancer Cells (Part I)	095
Chapter 9	Cancer Cells (Part II)	119



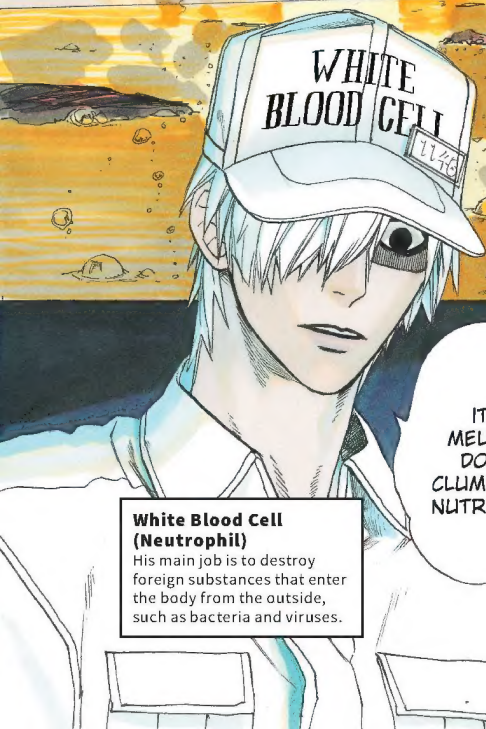
02

Cells at Work!

はたらく細胞

AKANE SHIMIZU





**White Blood Cell
(Neutrophil)**

His main job is to destroy foreign substances that enter the body from the outside, such as bacteria and viruses.

GASTRIC JUICES.
IT'S
MELTING
DOWN
CLUMPS OF
NUTRIENTS.



Red Blood Cell

She transports oxygen and carbon dioxide through blood circulation.

WHAT
IS ALL
THIS?

SO THIS
IS HOW
FOOD IS
DIGESTED!

Stomach

Stores ingested food and sterilizes it with the gastric acid secreted by the stomach lining. In addition, the digestive enzyme pepsin breaks down the food for the first step of the digestive process.

CHAPTER 5: FOOD POISONING



Receptor

Works like radar to detect bacteria and other bodies.



NOW,
HAND
OVER THE
NUTRIENTS
...

...IF YOU
WANT TO
LIVE!



THUD ㍈

GUH...

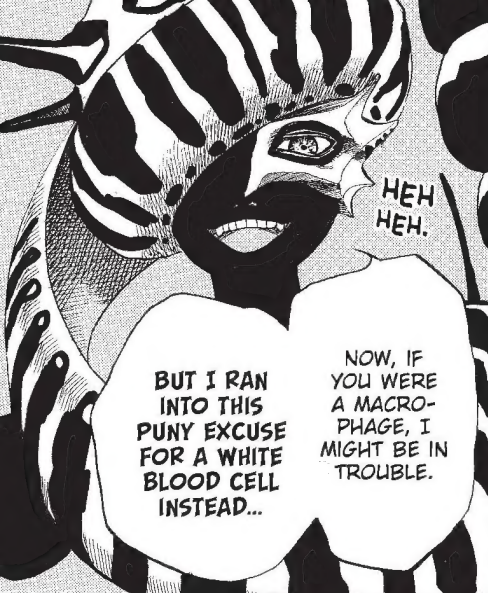


SHUT UP,
GERM!
I WON'T
LET YOU
LAY ONE
FINGER ON
A SINGLE
BLOOD
CELL OR
NUTRIENT!

KTCH

Eosinophil

A type of white blood cell. Said to make up a few percent of all white blood cells. Multiplies during allergic reactions and parasitic infections. Weaker than other white blood cells, but is capable of phagocytosis.







THAT WAS
CLOSE...
THANKS,
NEUTROPHIL.



OH? YOU
TWO KNOW
EACH
OTHER?

HEY,
EOSINO-
PHIL.

IT'S
BEEN A
WHILE.

WOULD
YOU LIKE
A TISSUE,
WHITE
BLOOD
CELL?

DRIP
ぽた
DRIP
ぽた



SHE WAS
LOSING TO A
GERM...

IS THAT ONE
IN PIGTAILS
REALLY A
WHITE BLOOD
CELL?

PSST!

PSST!



HEY...

HM?

YEAH, SHE'S
A WHITE
BLOOD CELL.
LIKE ME, WE
GREW UP IN
THE SAME BONE MAR-
ROW.

NICE
TO
MEET
YOU!

THANKS.

HOW
DO YOU
DO?



AND SHE'S
GOT SUCH
A BIG
WEAPON.

SHE'S
SO
WEAK...

IT WAS JUST
A BACTERIUM,
IT SHOULD'VE
BEEN NO
PROBLEM.

DID WE
EVEN HAVE
WHITE BLOOD
CELLS LIKE
THAT? I DON'T
RECOGNIZE
HER.

IT'S FINE,
NEUTRO-
PHIL.

WHOA!

SHE
ACTUALLY
HAS
ANOTHER
JOB...

JUST SO
YOU KNOW,
ELIMINATING
BACTERIA ISN'T
THE ONLY JOB
OF A WHITE
BLOOD CELL.



IF
YOU
SAY
SO.

HEH,
LET'S
GO.

I DON'T
MIND.

EVERYTHING
THEY'RE
SAYING IS
TRUE.



HISTAMINE

THE GEARS OF
DESTINY HAVE
ALREADY BEGUN
TO TURN...CAN
YOU STOP THIS
RHAPSODY OF
RUINATION?
OH, YE WRETCHED
WARRIORS
BEARING THE
WEIGHT OF THE
CROSS CALLED
"PEACE"...

**BASO-
PHIL!**

GUSH

Basophil

A type of white blood cell making up less than 1% of all white blood cells. Basophils encountering specific antigens are said to trigger the release of histamines, as well as allergic reactions. They manufacture chemicals that draw neutrophils and eosinophils to where they are needed. The role that basophils play in the immune system is not yet fully understood.

EVERYONE,
PLEASE
EVACUATE.
BACTERIA
ARE HERE.

W-WE'D
BETTER
GET
GOING.

THIS
WAY?!

SO YOU'RE
SAYING
THAT THERE
ARE MORE
BACTERIA
THAN CAN
BE KILLED
WITH
STOMACH
ACIDS?!

OH...
S-SURE.
IS THAT
WHAT
HE'S
SAYING?

BECAUSE OF THE
BRUTALITY OF ONE WHO
DOES NOT KNOW LOVE, OUR
PARADISE HAS BECOME A
LAND OF CARNAGE BEYOND
OUR CONTROL...THE ONLY
WAY WE CAN
END THIS
CALAMITY IS
WITH YOUR
HELP...

HUH?
UMMM...
WELL,
UH...



WAAAAUGH

WE ARE DEALING WITH AN APPARENT CASE OF BACTERIAL FOOD POISONING. CELLS IN THE AFFECTED AREAS SHOULD EVACUATE IMMEDIATELY.

Vibrio parahaemolyticus

A bacterium that lives in seawater. Ingesting seafood contaminated with this bacterium can cause infective food poisoning with symptoms such as severe stomach pain.

TIME TO PARTY, MY MINIONS!

STOMP

WAAAAUGH



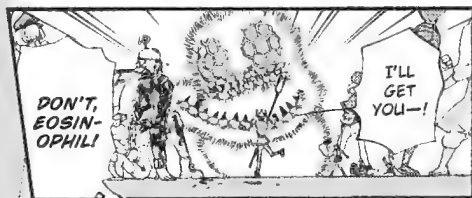
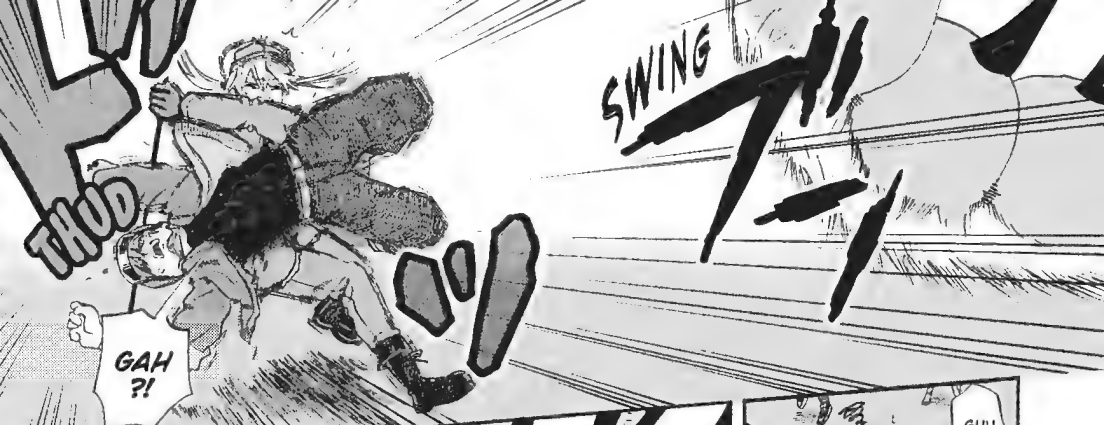
WHAT DOES THAT MATTER?! SOUND THE ALARM, NOW!

THERE'S AN AWFUL LOT OF DAMAGE TO THE STOMACH LINING FOR INFECTIVE FOOD POISONING.

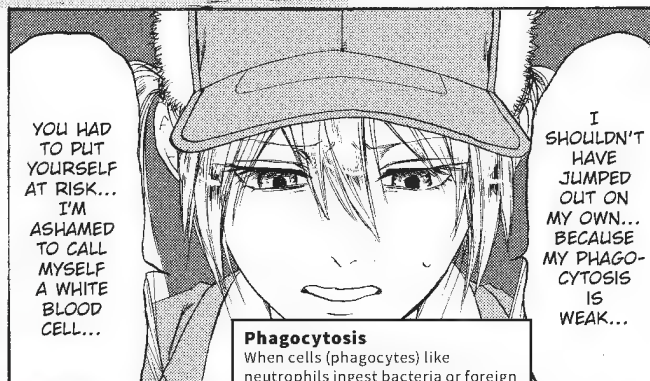
A BACTERIAL COLONY WAS ATTACHED TO THE RAW FISH! INVADER POPULATION IS HIGH!

HMM... WAIT, HUH?











AUGH, IT'S
SO SCARY!
SOMEONE
STOP THAT
THING!!

EEEE-
EEK!

CRACK

CRACK



DAMN
IT...

D...

ARE YOU
KIDDING?
WE DON'T
STAND A
CHANCE!

AREN'T
YOU WHITE
BLOOD
CELLS?
DO SOME-
THING!

RRRRRAO

I'LL
GO.



**YOU CAN'T
EVEN BEAT A
BACTERIUM!
YOU HAVEN'T
GOT A
PRAYER!!**

**WHAT...?!
DO YOU HEAR
YOURSELF,
EOSINOPHIL?!**

**IT'S MY
JOB.**

WH-
WHAT
...?

**BUT
WE DON'T
WANT
YOU TO
SACRIFICE
YOUR-
SELF...!**

**I MEAN,
SURE WE
CALLED
YOU WEAK
EARLIER...**

WH-WHY
WON'T
YOU SAY
SOME-
THING?!

BLOOD CELL

WH-
WHITE
CELL,
EOSINO-
PHIL IS
GOING IN
ON HER
OWN...
...WE
HAVE
TO
STOP
HER!

HEH.



E-EOSINO-
PHILI!!

PI
DASH

W

SHE'S NOT
THROWING
HER LIFE
AWAY.

HUH
...?

BUT,
BUT...
SHE'S...

DON'T
WORRY
ABOUT HER,
RED BLOOD
CELL.

EOSINOPHIL!!



YOU'RE
THE
ONLY ONE
WHO CAN
BEAT THAT
THING!!

DO IT,
EOSINO-
PHIL.



YES—
AS A WHITE
BLOOD CELL,
I HAVE A DUTY
TO ELIMINATE
BACTERIA...

BUT
I HAVE
ANOTHER
JOB!

THE
PRIMARY
ROLE
OF US
EOSINO-
PHILS...



WHOA?!



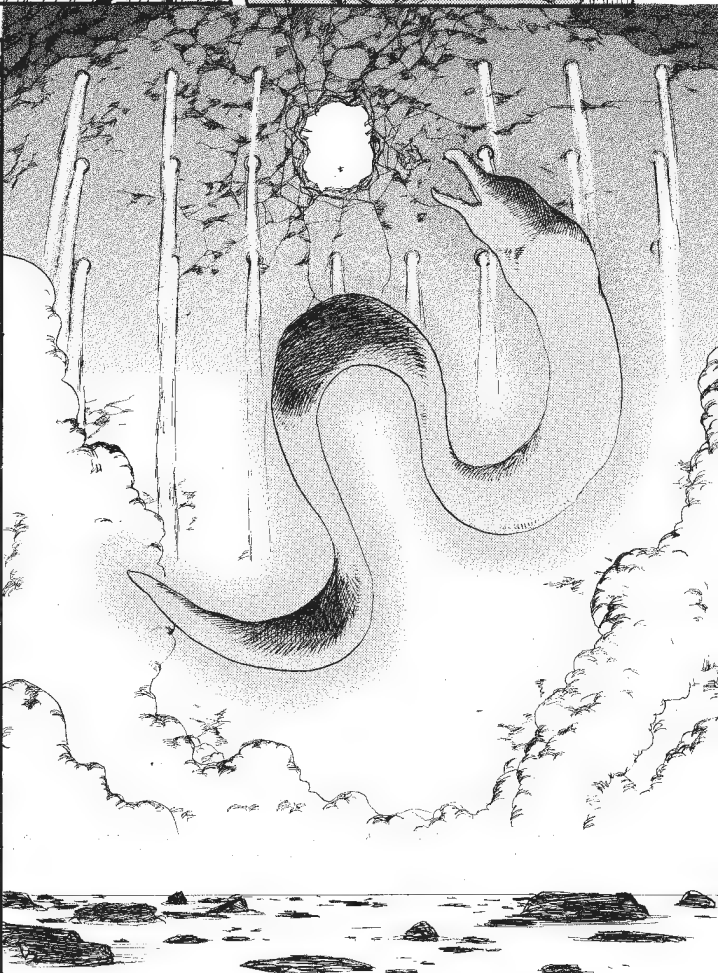
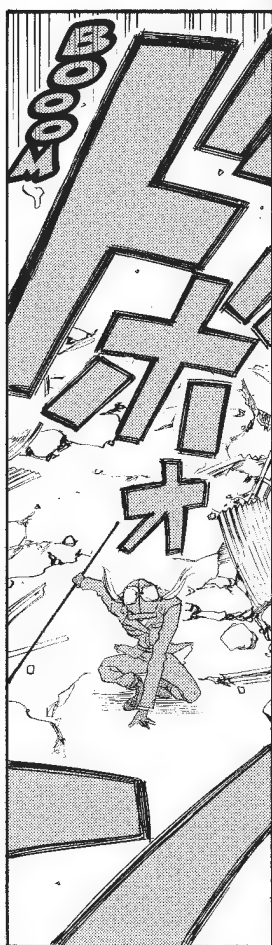
CLIMB
2
W

The Role of Eosinophils

When parasites enter the body,
Eosinophils work to damage it
and defend against infection.

...IS
TO KILL
PARA-
SITES!!

STAB



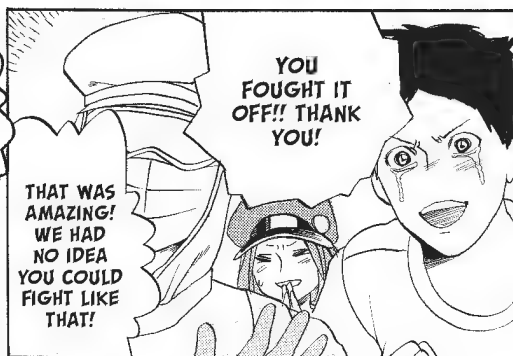
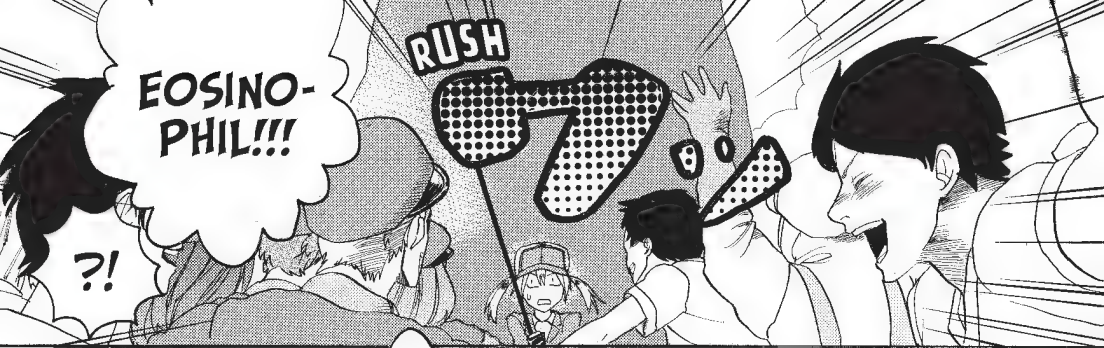


I BARELY
MANAGED
TO STOP IT
FROM
ENTERING
THE BODY...

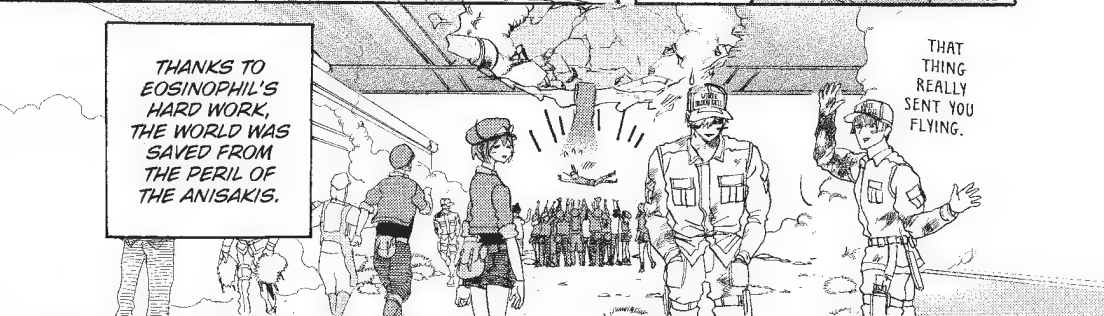


PHEW
...

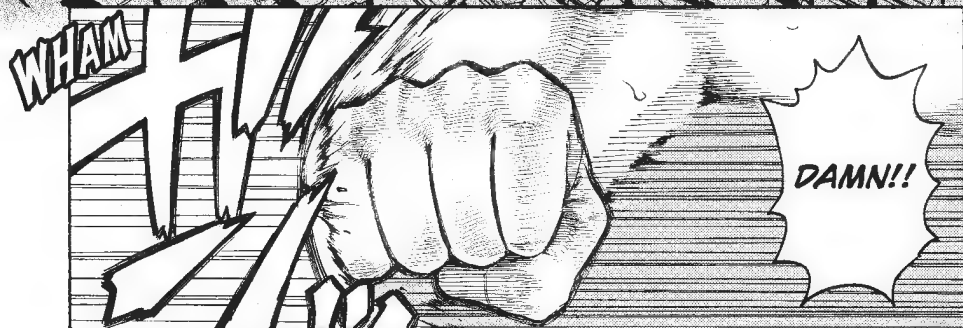
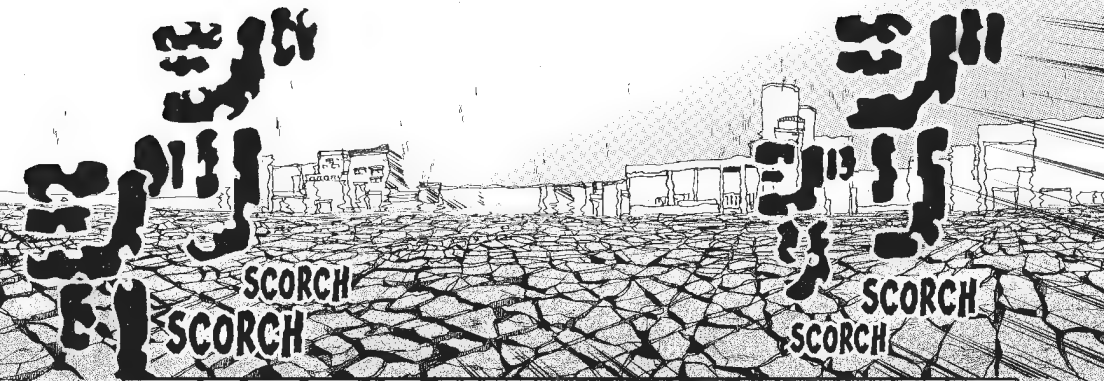








Cells at
Work!
はたらく細胞



シリ
リ
SCORCH

...ABOUT
THIS
GLOBAL
WARMING
...?!

シリ SCORCH
シリ SCORCH

IT'S ALL
DRIED UP
BECAUSE OF
THIS HEAT.
THERE USED
TO BE MORE
WATERWAYS
AND SUCH.

THAT'S
WHY WE'RE
MARCHING
THROUGH THE
CAPILLARIES
TO LOSE HEAT.

**Thermo-
regulation**

One way the
body maintains
its temperature
is to increase
blood flow to
areas near the
skin, better
radiating
heat away.

IS THE
AREA
NEAR THE
EPIDERMIS
SUPPOSED
TO LOOK
LIKE THIS?

DOESN'T LOOK
ANYTHING
LIKE THE
BROCHURES...

S-
SENPAI
...

Red Blood Cell

She transports oxygen and
carbon dioxide through
blood circulation.



CHAPTER 6: HEAT STRESS





ROGER
THAT.

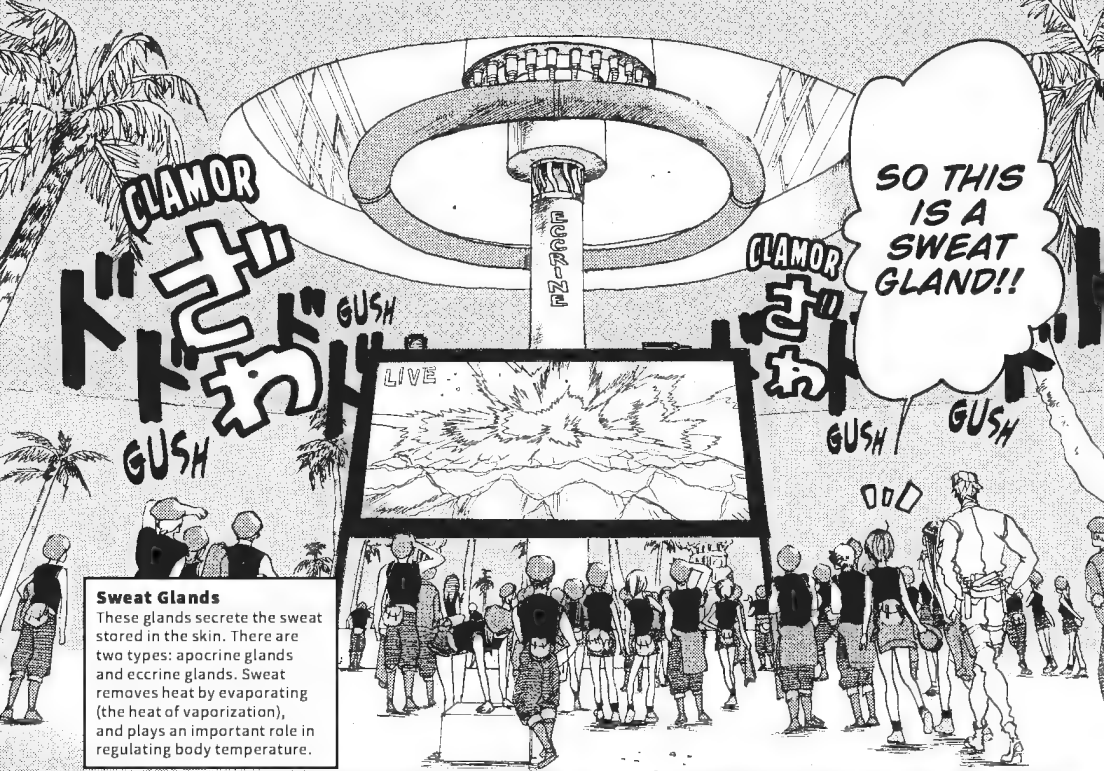


White Blood Cell (Neutrophil)

His main job is to destroy foreign substances that enter the body from the outside, such as bacteria and viruses.

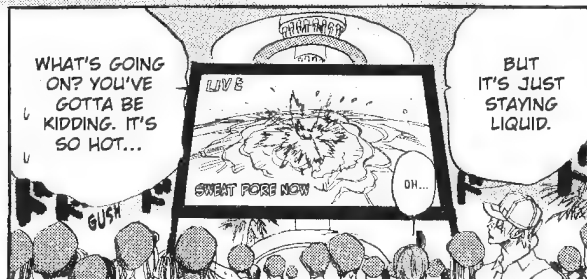
NO. 1146
HERE. JUST
ELIMINATED
THE LAST
BACTERIUM.





Sweat Glands

These glands secrete the sweat stored in the skin. There are two types: apocrine glands and eccrine glands. Sweat removes heat by evaporating (the heat of vaporization), and plays an important role in regulating body temperature.



THAT'S ALL THAT WE BLOOD CELLS CAN DO.

WE HAVE TO
RELEASE MORE
HEAT FROM THE
EPIDERMIS...!!

GIVE IT
EVERYTHING
YOU'VE GOT
TO REGULATE
THE BODY
TEMPERA-
TURE!!

EVERYONE
MARCH
THROUGH THE
CAPILLARIES
TO RELEASE
HEAT!

**COULD
THIS
BE...?!**

FLICKER
千力

OH NO,
THE
LIGHTS
...!

HUH?
WHAT'S
GOING
ON?

BUT THIS
INCREASE ISN'T
NORMAL...! AND
SWEATING ISN'T
COOLING DOWN
THE BODY
LIKE IT SHOULD...
THE BODY
TEMPERATURE
KEEPS RISING...

A black and white manga-style illustration depicting a very dense crowd of people. The crowd consists of many individuals of different ages and ethnicities, packed closely together. Overlaid on the crowd are large, bold, stylized Japanese sound effects: "STAMPED E" repeated vertically down the center, and "ト" (To) repeated horizontally across the middle. In the upper right corner, there is a speech bubble containing English text. In the lower left corner, there is another speech bubble containing English text.

WHITE
BLOOD
CELL,
WHAT'S
GOING
ON?!

STAMPED
E

ト ト ト ト ト

INCREASED
CIRCULATION...
ON THE SURFACE,
IT'S JUST ONE COG
IN THE BODY'S
THERMOREGULATION
SYSTEM...

INCREASED
CIRCULATION...
ON THE SURFACE,
IT'S JUST ONE COG
IN THE BODY'S
THERMOREGULATION
SYSTEM...

FLICK

Heat Stress

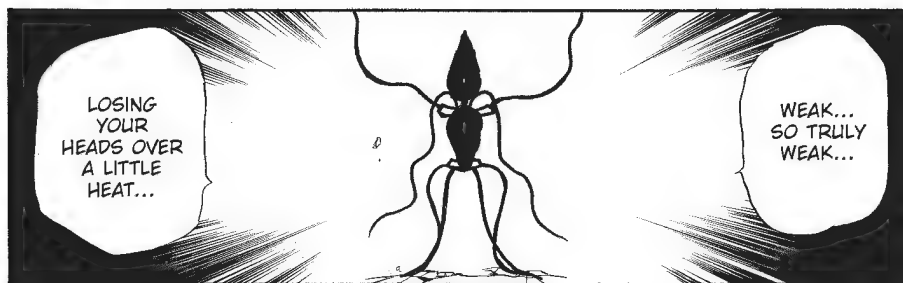
A general term for health disorders resulting from the malfunction of thermoregulatory processes, or from the breakdown in the balance of water or electrolytes in the body. It is divided into three levels based on severity. Heat syncope, characterized by symptoms such as dizziness, lightheadedness and numbness in the lips, is considered the lightest level of heat stress. It is caused when blood vessels near the skin dilate to increase blood flow, leading to low blood pressure and reduced circulation to the brain.

**IT'S
HEAT
STRESS!**

**TH-THIS
ISN'T
GOOD!**

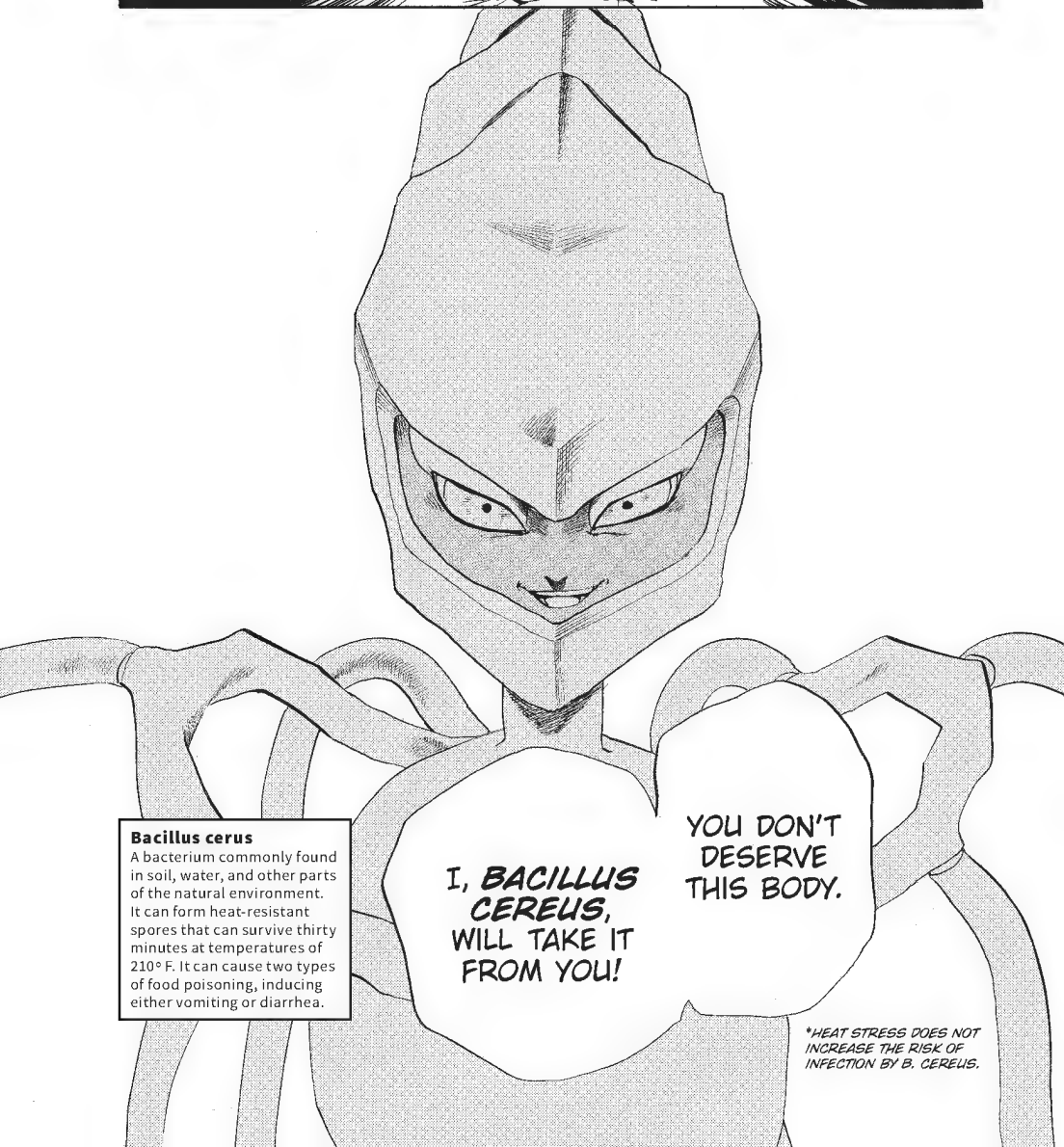






LOSING
YOUR
HEADS OVER
A LITTLE
HEAT...

WEAK...
SO TRULY
WEAK...



Bacillus cereus

A bacterium commonly found in soil, water, and other parts of the natural environment. It can form heat-resistant spores that can survive thirty minutes at temperatures of 210° F. It can cause two types of food poisoning, inducing either vomiting or diarrhea.

I, **BACILLUS
CEREUS**,
WILL TAKE IT
FROM YOU!

YOU DON'T
DESERVE
THIS BODY.

*HEAT STRESS DOES NOT
INCREASE THE RISK OF
INFECTION BY *B. CEREUS*.



AUGH

THAT'S
ME.

SO, YOU'RE
HERE TO
KICK US
WHEN WE'RE
DOWN...

EEEEEEK

A
GERM!!

ARE
YOU
THE
ONE
THEY
CALL
"WHITE
BLOOD
CELL"?



RED
BLOOD
CELL!
LOOK
AFTER
THE
PLATE-
LETS!

OH,
OKAY!



POSE

EN
GARDE!

ON THE
HONOR
OF THE B.
CEREUS
SPECIES,
THIS BODY
SHALL BE
MINE!



**JUUUST
KIDDING!**

LEAP **アッ!**

THIS
WORLD'S
ABOUT TO
END! I'M
GOING TO
GO HIDE
SOMEWHERE
UNTIL IT
DOES!!



DID YOU
REALLY
THINK
I'D FIGHT
YOU?!

AH HA
HA HA
HA HA!
YOU
MORON!

YOU
REALLY
FELL
FOR
THAT?!



WHAT
?!

AH
HA
HA
HA!

COME
BACK HERE,
YOU GERM
BASTARD!!!

...GO
GET HIM,
WHITE
BLOOD
CELL...

B
A
S
T
A
R
D

B
A
S
T
A
R
D

THUMP

THUMP

THUMP

THUMP THUMP THUMP THUMP THUMP THUMP THUMP THUMP THUMP THUMP



HEH.

ARE YOU SAYING THAT?

LUCKY FOR ME, THE BLOOD VESSELS AROUND HERE ARE FLOWING NICE AND FAST!

ALMOST LIKE THEY'RE TELLING ME, "HEY MR. CEREUS, PLEASE GET AWAY AND TAKE OVER THIS BODY!"



BWA HA HA!! EVERYONE HERE LOOKS LIKE THEY CAN'T TAKE THE HEAT.

GUH... HE'S GOING TO GET AWAY BY HITCHING A RIDE WITH THE BLOOD CELLS!



SWING

WHOA, THAT WAS CLOSE!

THAT'S ENOUGH!!

LEAP



AUGH

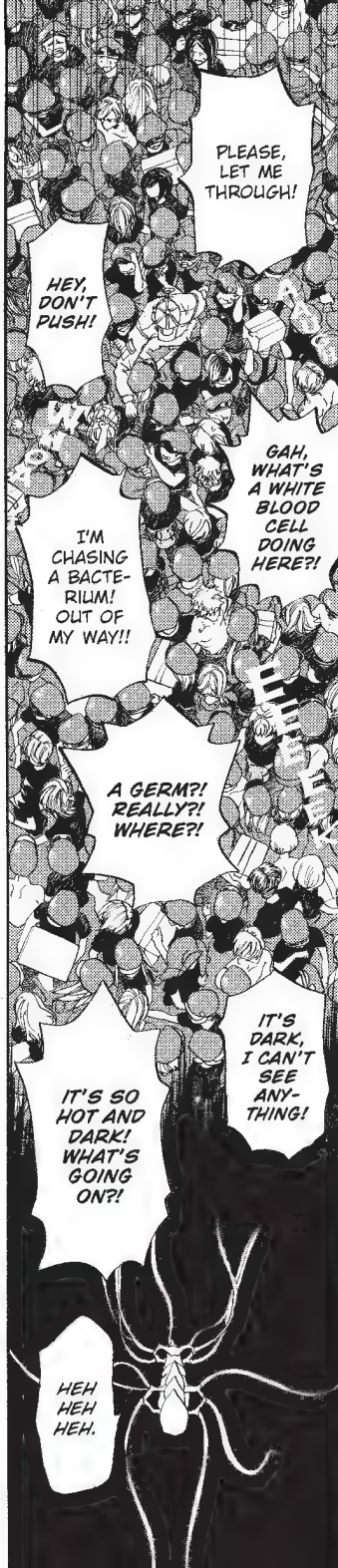
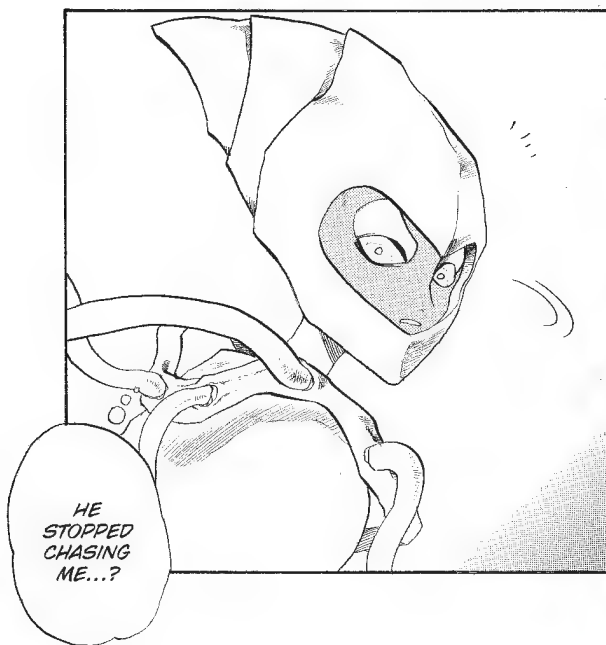
EEEK

WHY, YOU....!!

ALL THESE NICE OBSTACLES SURE ARE CONVENIENT!

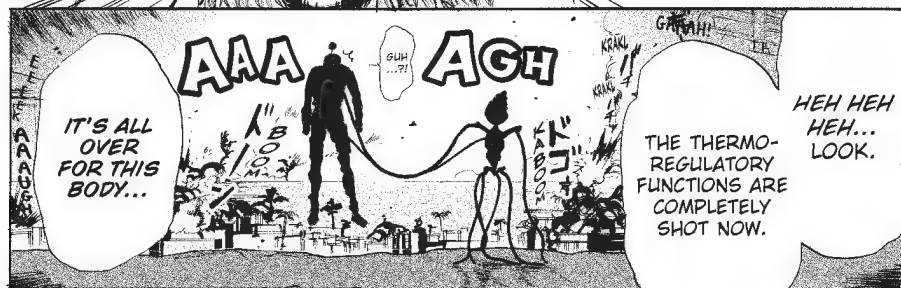
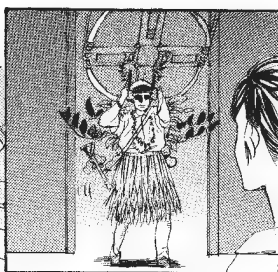
CRASH

ASH









TUG
<"
<"

WHAT
THE-?!

GRAB

!!

IT'S TIME
TO ACCEPT
REALITY, BUDDY!
YOU TRIED
A BUNCH OF
THINGS LIKE
SWEATING AND
INCREASING
BLOOD FLOW.

YOU'RE
REALLY
GETTING
ON MY
NERVES!!
GIVE IT
UP AL-
READY.

IT'S THE
END FOR
THIS BODY
NOW!!

ONCE YOU
REALIZE THAT,
YOU CAN GO
TAKE IT EASY
IN SOME COOL
CORNER AND
LOOSEN THOSE
CLOTHES!

BUT THIS
BODY'S THERMO-
REGULATORY
SYSTEM HAS
FAILED! IT LOST
TO THE OUTSIDE
TEMPERATURE!

...LET YOU
HURT THIS
BODY...!

I'LL
NEVER...

WHEEE

WHEEE

SLAP
SLAP



**THIS
BODY
IS STILL
ALIVE!**

**SAY
WHAT
YOU
WILL...!**

**THAT'S
NO REASON
FOR ME TO
GIVE UP ON
MY JOB!**

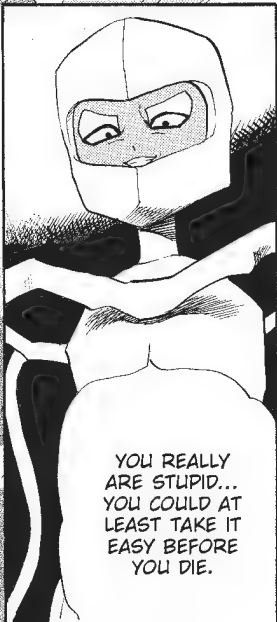
**EVEN IF
THE THERMO-
REGULATORY
SYSTEM HAS
FAILED, AND
EVEN IF MY
WORK IS
MEANING-
LESS...**



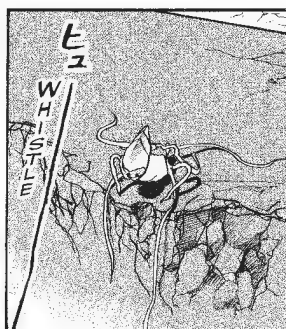
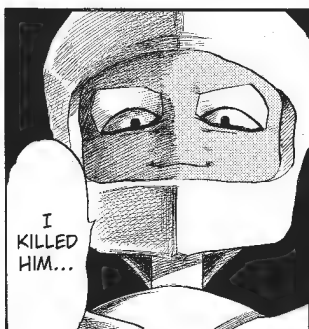
GUH...



**AUGH
?!
CRACK**



**YOU REALLY
ARE STUPID...
YOU COULD AT
LEAST TAKE IT
EASY BEFORE
YOU DIE.**



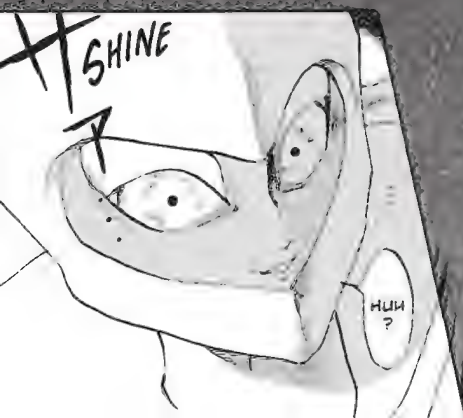
**YES...
YES!!**

**THIS
LAND
WILL BE
MINE!!!**

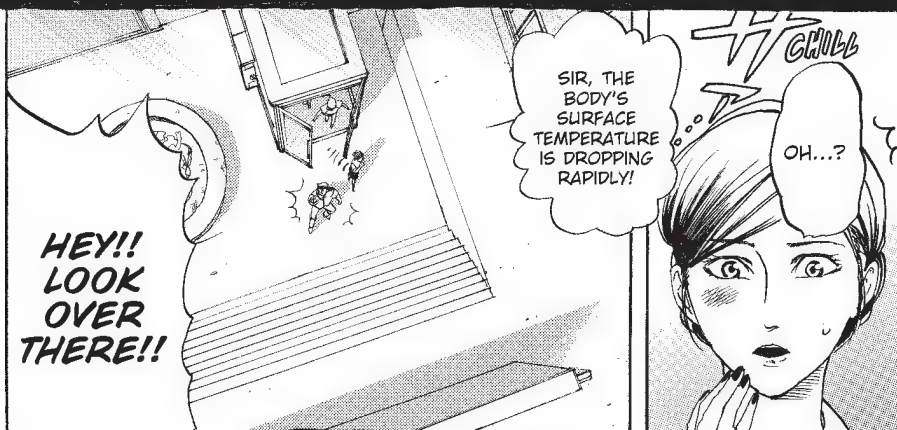


**I
CAN'T
STOP
LAUGH-
ING!!**

**THERE'S
NO ONE
LEFT TO
STAND IN
MY WAY!!**







Intravenous Rehydration

An injection into a vein, most often administered to infuse fluids, electrolytes, or nutrients.

WHAT
THE HECK
IS THAT
PIPE?!

RUSH

ゴ^ッSLOSH
ポッ
...

C-COULD
IT BE...?

WATER-
RRRR!!!

SPLOOSH

IS IT
COOLING
OFF AND
TAKING ON
FLUIDS?!

IT'S GETTING
BRIGHTER...
IS THE BODY
RECOVER-
ING?!

YEAH

RAAAH

...SAY—
WOW,
THAT'S
COLD!!

GOSH

ザパ
SPLASH

THIS...
THIS CAN'T BE
HAPPEN-
ING...

YOU
DID IT!
YOU
DID IT,
COM-
MAND-
ER!!

YOUR RAIN
DANCE
REACHED
THE
HEAVENS!!

NOW
THIS
BODY
WILL
BE...

I'M SO
GLAD
WE
DIDN'T
GIVE
UP...



WOOO.
NOW *THAT'S*
REFRESHING.

SPLASH

HEY,
COME
CHECK
THIS
OUT!

LATER—

I DUNNO...
BUT I DON'T
CARE RIGHT
NOW.

BUT...
WHY?

WOW,
HE'S
RIGHT!!

WHOA.

IT'S REALLY
COOL AROUND
THE NECK
AND ARMPITS,
NEAR BIG
BLOOD
VESSELS!

Cooling the Body

Escaping to a cool spot,
then cooling down parts
of the body with large
blood vessels (around the
neck, armpits, and upper
thighs) is an effective
way to cool down.

I HEARD
YOU HAD
HEAT
STRESS.

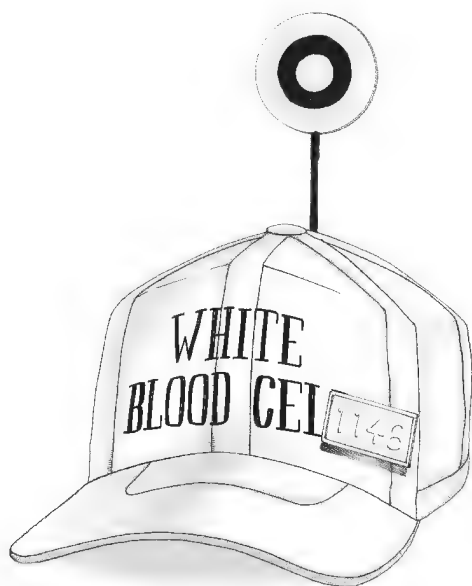
GOTTA BE MORE
CAREFUL.

THE BLOOD
CELLS WERE
ABLE TO TAKE
A BREAK TO
ENJOY THE
REFRESHING
COLD...

NICE
AND
COOL...

WHITE
BLOOD CELL,
YOU SHOULD
REALLY DRESS
LIGHTER FOR
WORK.

CHAPTER 6: END

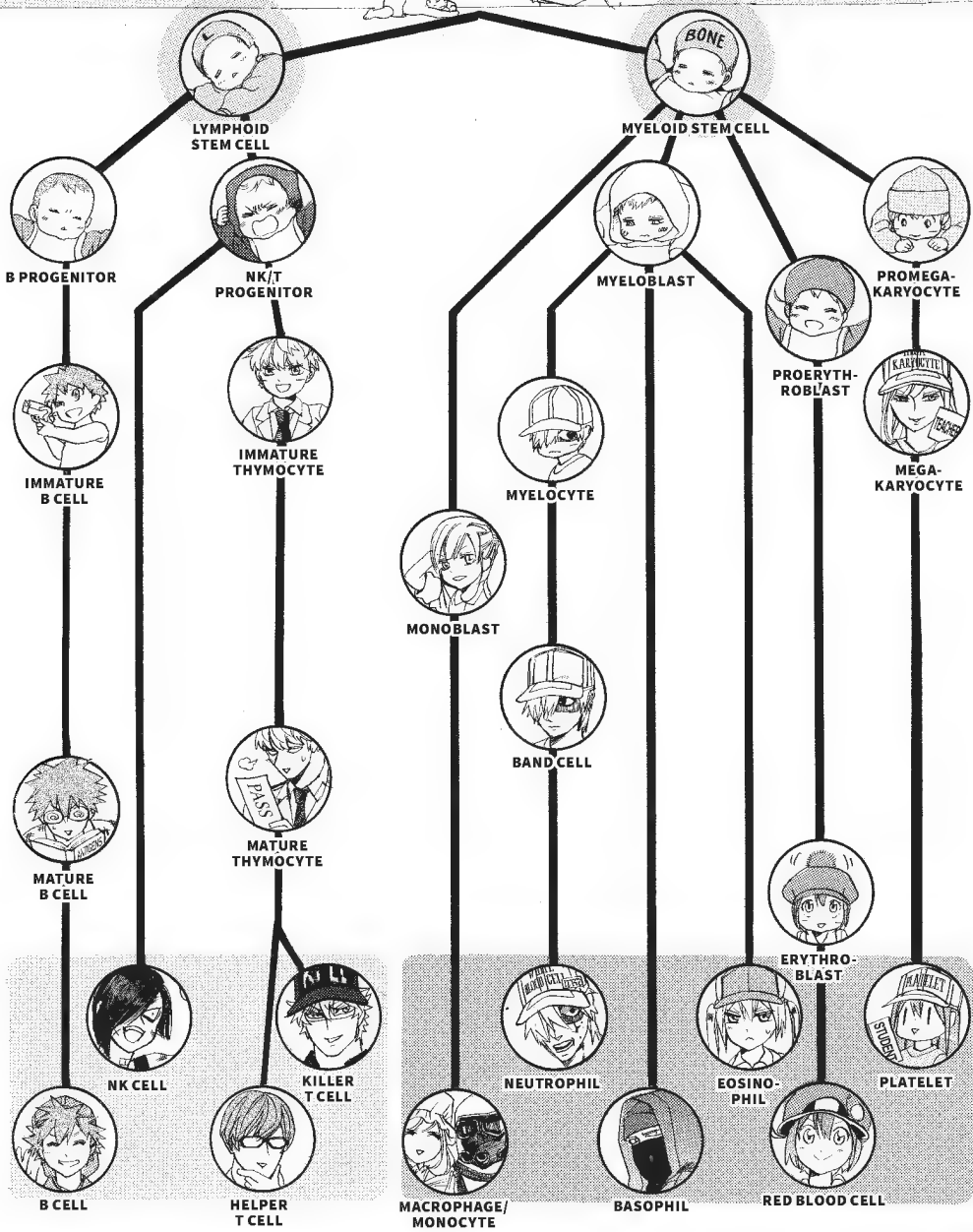


BONE MARROW

THE DIFFERENTIATION OF BLOOD CELLS (ABBREVIATED)



← HEMATOPOIETIC STEM CELLS



わい
HUSTLE

IT'S TOO
COMPLICATED
INSIDE THE
BODY!

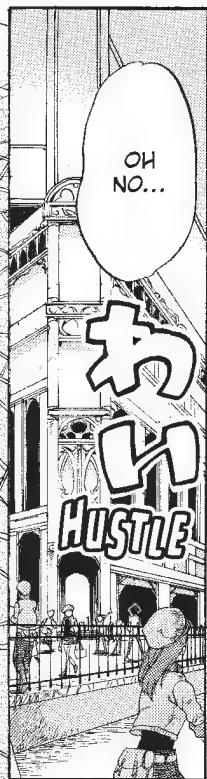
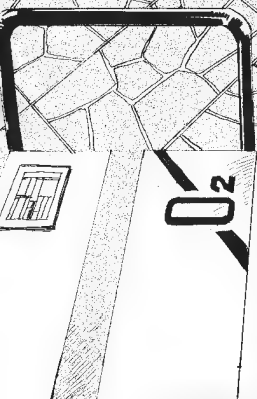
BWUH...

I GOT
LOST
AGAIN.

OH
NO...

わい
BUSTLE

わい
HUSTLE



HUH
OH?! ...?

IS
THIS
...?!



TURN

キ

WHERE
AM I...?

TURN

キ

TEE

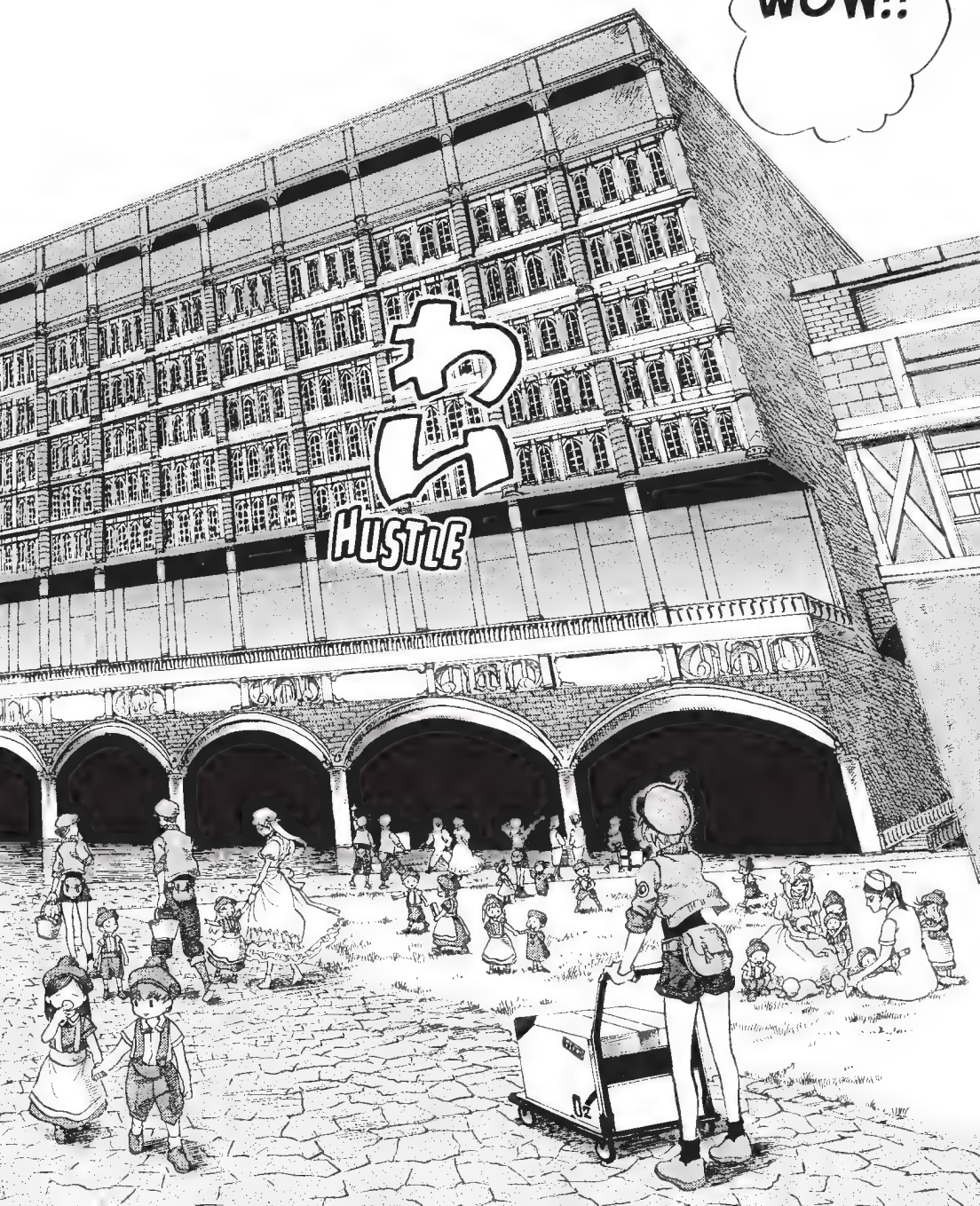
HEE

HEE

HEE!

CHAPTER 7: ERYTHROBLASTS AND MYELOCYTES

WOW!!



あ
い
HUSTLE

BUSTLE

あ
い

IT'S THE
RED BONE
MARROW!!





BLOOD
CELLS ARE
BORN HERE
AND SPEND
THEIR EARLY
CHILDHOOD
HERE.

BRINGS
BACK
MEMO-
RIES.

THE RED BONE
MARROW IS
THE HOME OF
BLOOD CELLS.

I WAS
HERE
ONCE,
TOO...



Progenitor Cell

A cell that has not yet
differentiated from a stem
cell to a specific cell type.

WE'VE GOT
ANOTHER
PROGENITOR
CELL BORN!



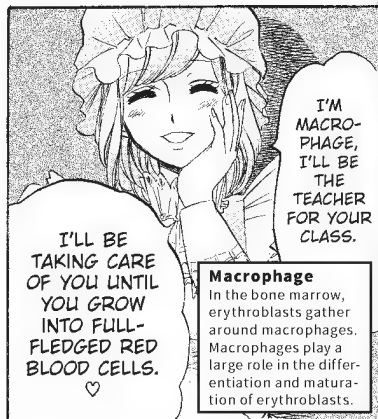
WELL...

SHOULD
THIS ONE
BE...A RED
BLOOD
CELL?

SHE DOES HAVE
RED HAIR.

**Hematopoietic
Stem Cell**

Makes blood cells
such as red blood
cells, white blood
cells, and platelets.



I'LL BE
TAKING CARE
OF YOU UNTIL
YOU GROW
INTO FULL-
FLEDGED RED
BLOOD CELLS.
♡

I'M
MACRO-
PHAGE,
I'LL BE
THE
TEACHER
FOR YOUR
CLASS.

Macrophage

In the bone marrow,
erythroblasts gather
around macrophages.
Macrophages play a
large role in the differ-
entiation and matura-
tion of erythroblasts.

ざわ
ざわ
GLAMOR
GLAMOR
ざわ
ざわ



OKAY! IS
EVERYONE
HERE?

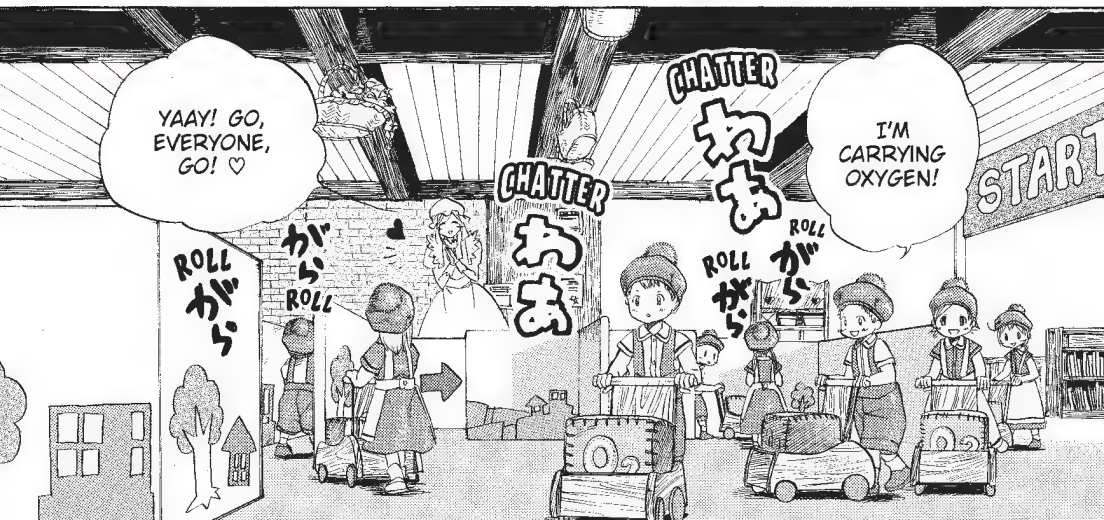
Erythroblasts

A cell still in the midst of
differentiation, before it
turns into a red blood cell.
Lives in the bone marrow.



YAY!!

LET'S ALL
WORK HARD
SO YOU CAN
BECOME
RED BLOOD
CELLS!
♡



YAA! GO,
EVERYONE,
GO! ♡

ROLL
がら

がら
ROLL

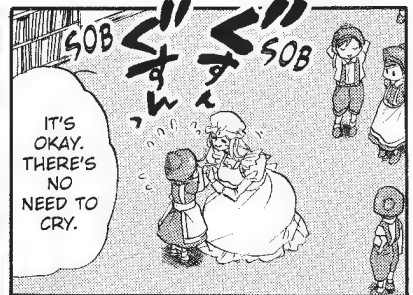
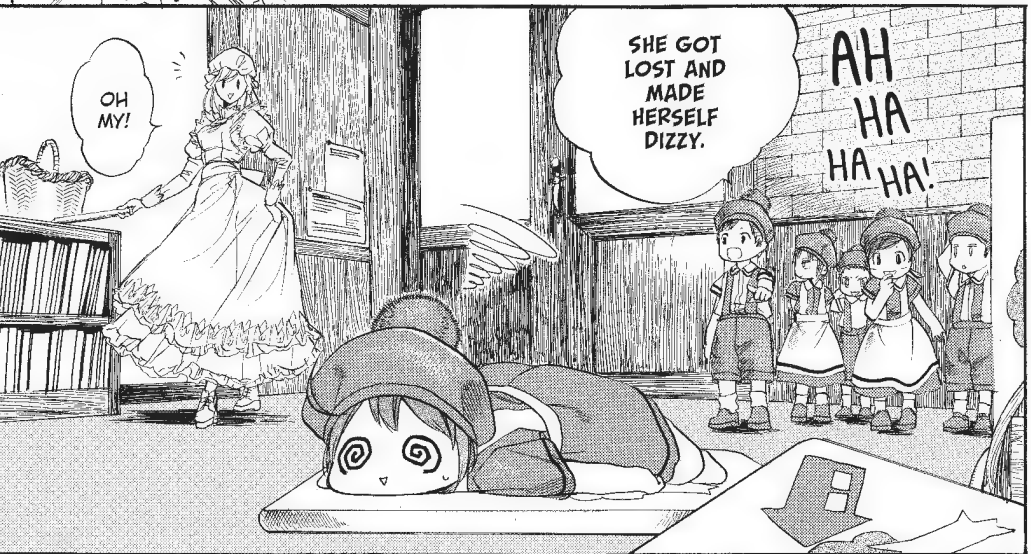
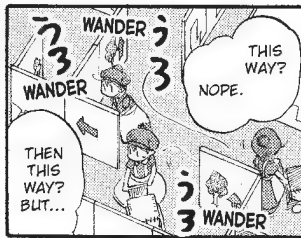
CHATTER
あ
あ
あ

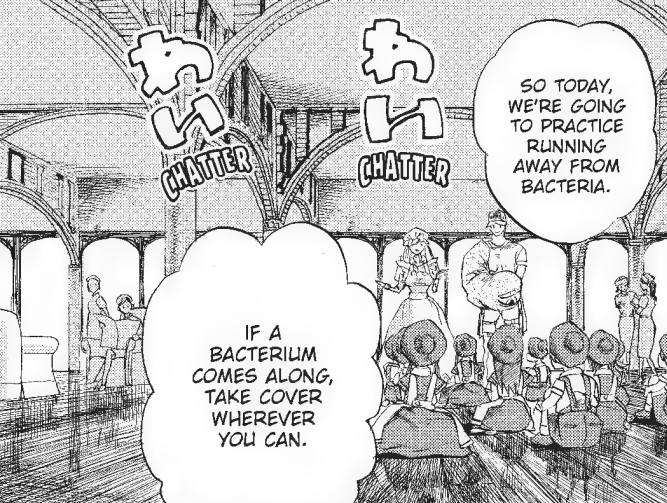
CHATTER
あ
あ
あ

ROLL
がら

I'M
CARRYING
OXYGEN!

START





SO TODAY,
WE'RE GOING
TO PRACTICE
RUNNING
AWAY FROM
BACTERIA.

IT'S NOT
ALWAYS
PEACEFUL
IN BLOOD
VESSELS.

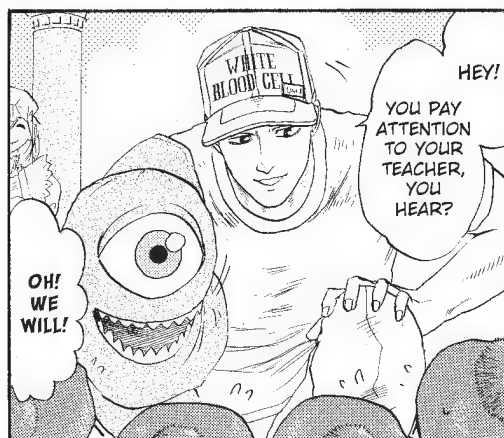
SOME-
TIMES,
SCAAARY
BACTERIA
COME
ALONG.

IF A
BACTERIUM
COMES ALONG,
TAKE COVER
WHEREVER
YOU CAN.



Q-
QUIT
IT!

SHE'S
GOING TO
GET LOST
AND GET
EATEN FOR
SURE!



HEY!

YOU PAY
ATTENTION TO
YOUR
TEACHER,
YOU
HEAR?

OH!
WE
WILL!



DON'T
WORRY!

...IF
I GET
LOST?

BUT
WHAT
DO I
DO...

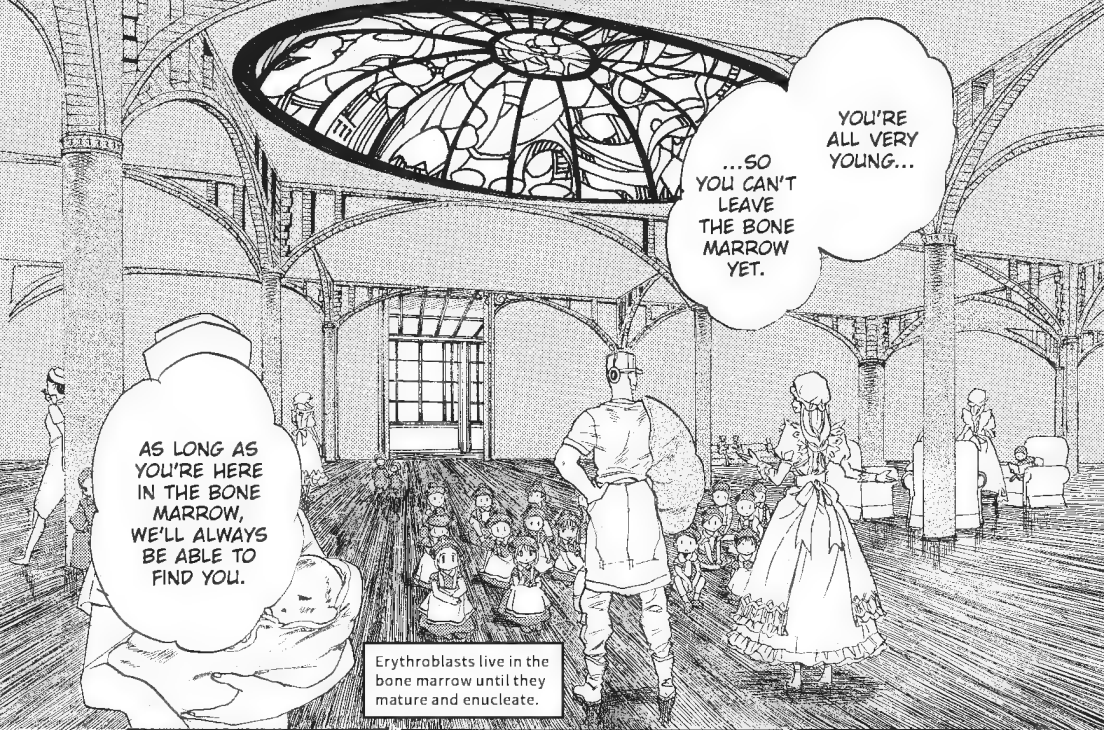


MR.
NEUTRO-
PHIL
WILL BE
PLAYING
THE ROLE
OF A
BACTERI-
UM.

HELLO
EVERY-
ONE!

**White Blood Cell
(Neutrophil)**

His main job is to destroy
foreign substances that enter
the body from the outside,
such as bacteria and viruses.



YOU'RE
ALL VERY
YOUNG...

...SO
YOU CAN'T
LEAVE
THE BONE
MARROW
YET.

AS LONG AS
YOU'RE HERE
IN THE BONE
MARROW,
WE'LL ALWAYS
BE ABLE TO
FIND YOU.

Erythroblasts live in the
bone marrow until they
mature and enucleate.



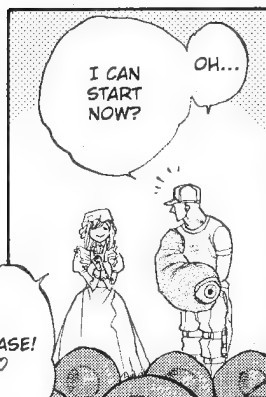
OKAY,
HERE
WE
GO!



IF YOU'RE
SCARED, WE
COULD STICK
TOGETHER.

OH,
REALLY?

THANKS!!



I CAN
START
NOW?

OH...

PLEASE!
♡

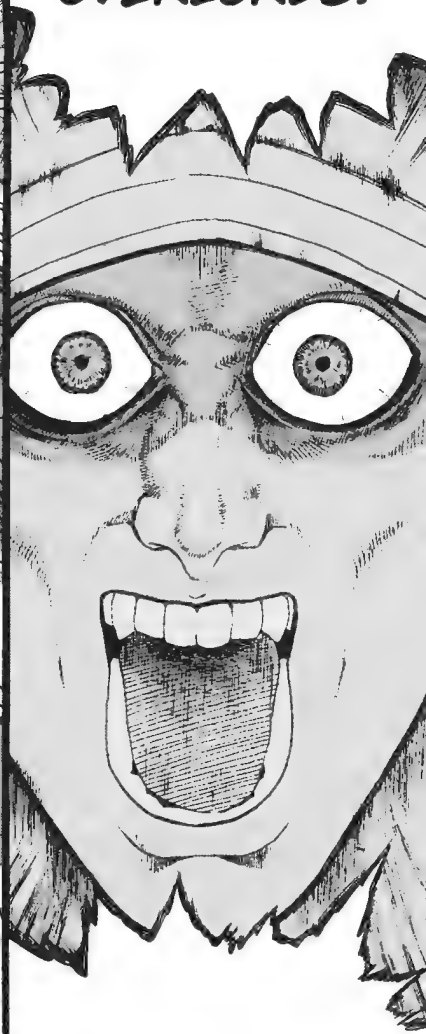


LET'S
GET
READY,
EVERY-
ONE.

PLEASE
DON'T
LET ME
GET
LOST...



**GRRRR!!!
BOW DOWN
TO YOUR
BACTERIA
OVERLORDS!**



**I WANT ME
SOME TASTY
RED BLOOD
CELLS!**



DON'T LET
THE SCARY
BACTERIUM
CATCH YOU!
♡

DID EVERY-
ONE FIND A
GOOD HIDING
PLACE?



OH?
WHAT HAP-
PENED
TO THAT
GIRL....?



I GOT
LOST...



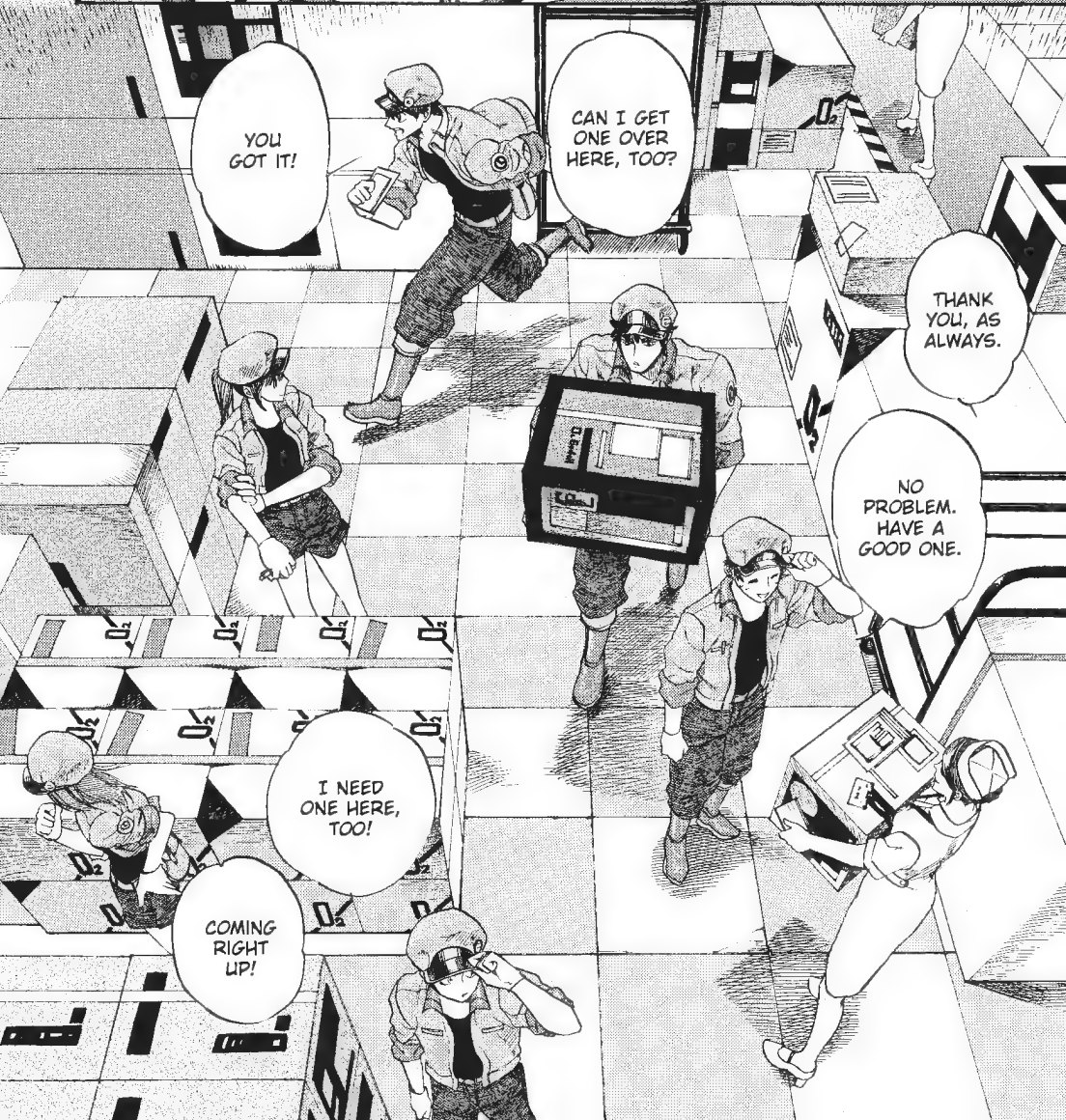
HUH...?

HERE'S
YOUR
OXYGEN
DELIV-
ERY!!



I'LL
NEVER
BE
A RED
BLOOD
CELL...

BAC-
TERIA
ARE SO
SCARY...
AND
I GET
LOST SO
EASILY.



YOU
GOT IT!

CAN I GET
ONE OVER
HERE, TOO?

THANK
YOU, AS
ALWAYS.

NO
PROBLEM.
HAVE A
GOOD ONE.

I NEED
ONE HERE,
TOO!

COMING
RIGHT
UP!

THEY
WORK
SO
FAST!

THEY'RE
SO COOL...



...RED
BLOOD
CELLS?

ARE
THEY...



YOINK

WHA?!



SAY,
WHAT'RE
YOU DOING
IN A PLACE
LIKE THIS?

OH, MR.
NEUTRO-
PHIL!
I WAS
JUST...



SO...
I CAN BE
LIKE THEM
ONE DAY?

BLUSH

ほっ





AREN'T YOU AN ERYTHRO-BLAST? A BABY RED BLOOD CELL...?

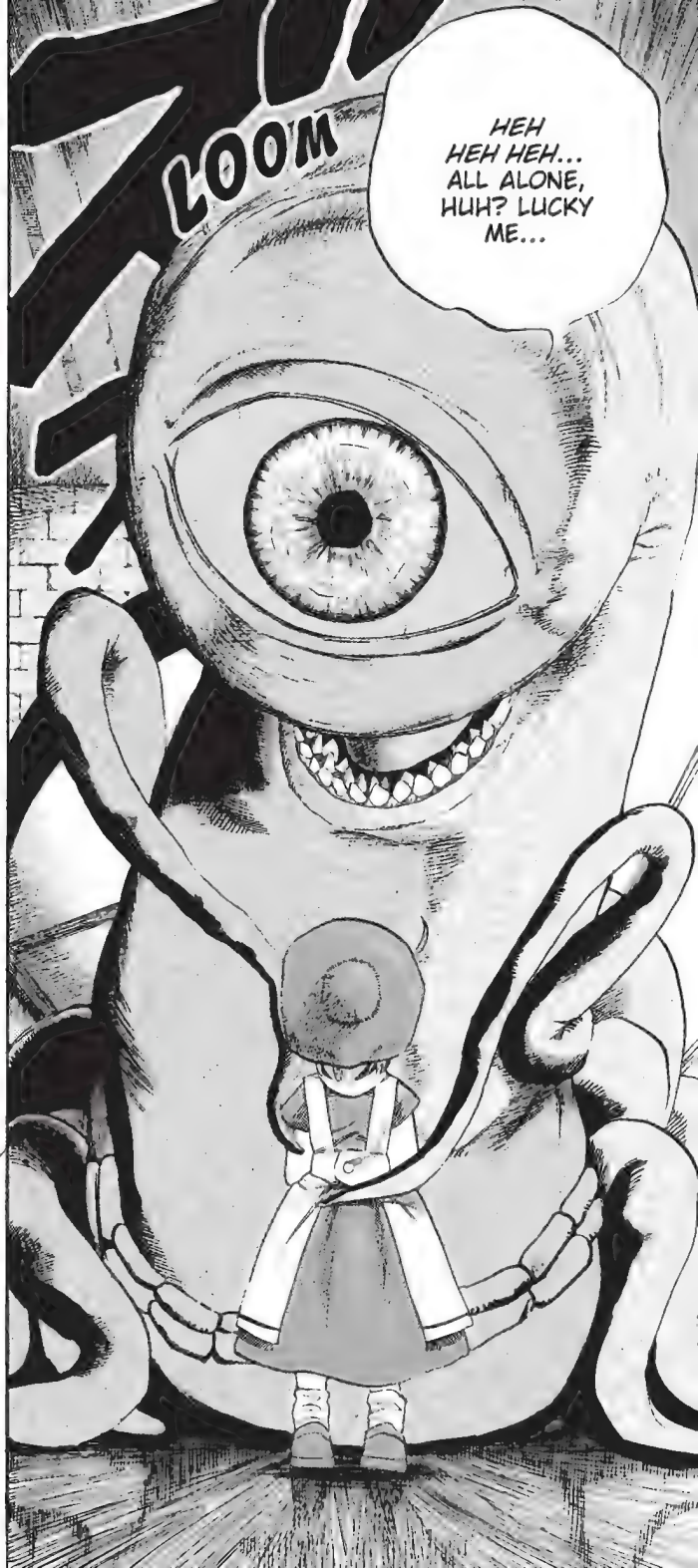


THAT'S A COSTUME, RIGHT, MR. NEUTRO-PHIL? THIS IS A DRILL, RIGHT?

YOU AREN'T WRONG TO CALL ME THAT. I AM FAR SUPERIOR TO YOU, AFTER ALL...

HMM, "MISTER," HUH?

BUT YOU'RE WRONG ABOUT ONE THING.



HEH HEH HEH... ALL ALONE, HUH? LUCKY ME...

A bacterium that is ubiquitous in the natural world. Can cause opportunistic infections.

BWAH
HA HA
HAH—!

HELP!
MS. O-
MACRO-
PHAGE!

HUH
 ?!

IT
WON'T
OPEN!!
WHY?!

A DOOR!
I HAVE
TO GET
OUT OF
HERE...

OH!

WHERE
DO YOU
THINK
YOU'RE
GOING?

HAHAH!

НААН!



WYAM

グルー
GLOWWW

ERYTHRO-
BLASTS
CANNOT LEAVE
THE BONE
MARROW.

THIS IS NO
TIME FOR
THAT!!!

SLIDE
!!

NOOOOO!!

I JUST
LOOOVE TO
BULLY
POWERLESS
LITTLE BLOOD
CELLS LIKE
YOU.

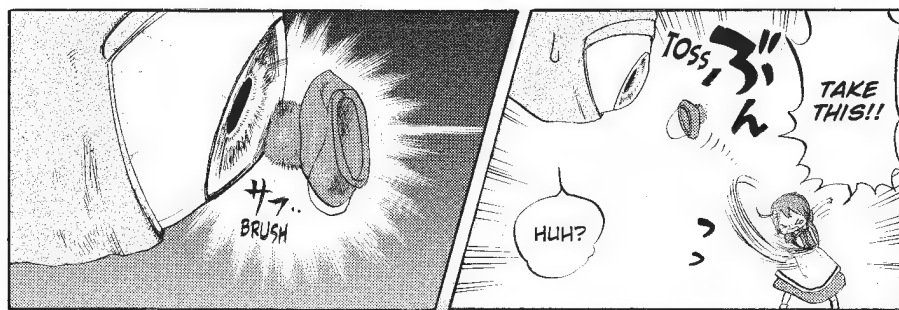
**Pseudomonas
aeruginosa ②**
Multiplies rampantly even
without nutrients. Once in
the human body, wreaks
havoc on blood cells and
cellular tissues.


WHY
DID I, A
BACTERIUM
WHO
DOESN'T NEED
NUTRIENTS OR
OXYGEN TO
SURVIVE...

LET ME TELL
YOU SOME-
THING, LITTLE
ERYTHRO-
BLAST.

...BOTHER
TO COME
ALL THE
WAY HERE
INTO THIS
BODY?
THAT'S
BECAUSE...








EVEN
I MIGHT
BE AN
AWESOME
RED BLOOD
CELL
SOMEDAY!!

I...
I DON'T
WANT
TO DIE
HERE!!



**HOLD IT
RIGHT
THERE!!!**



**YOU'VE GOT
SOME NERVE
ATTACKING A
BLOOD CELL IN
THIS BODY!!**

**YOU
GERM!!**



**ANTIGEN
SIGHTED
!!!**

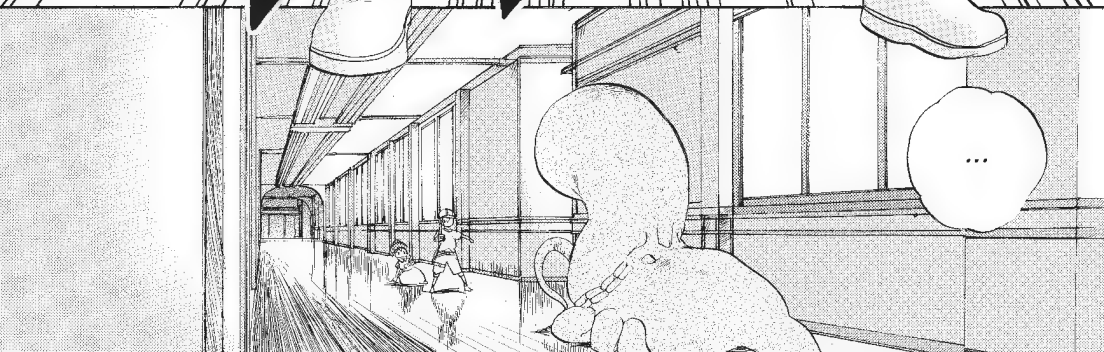
ポーズ

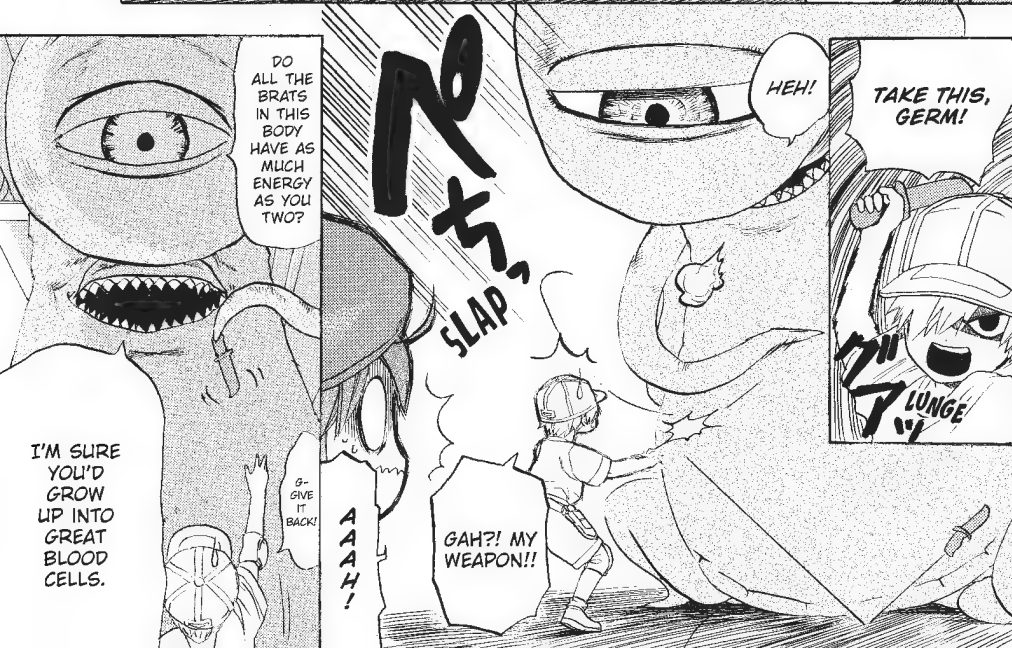
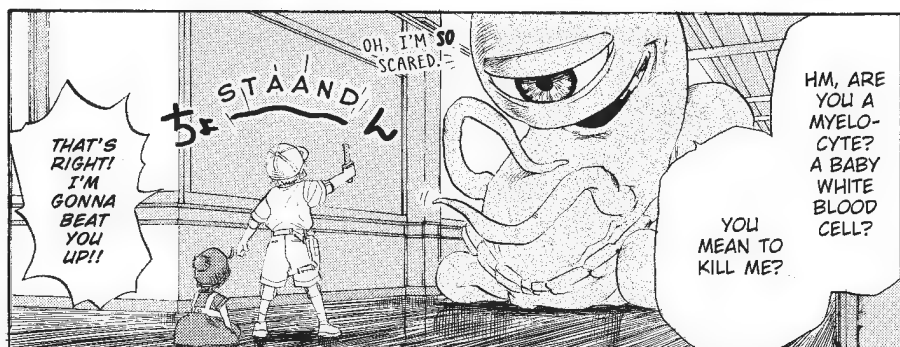
ドッ

ドッ

Myelocyte

A cell that has yet to differentiate into a white blood cell (neutrophil, eosinophil, or basophil). Lives in the bone marrow.







IF YOU
WERE GONNA
BE ALIVE
THAT LONG,
ANYWAY!!!

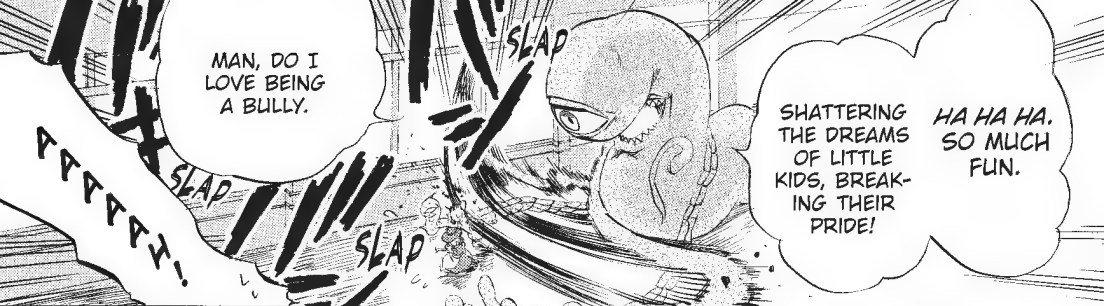


HEH.
PATHETIC.

GUH!

OH NO!
ARE
YOU
OKAY?!

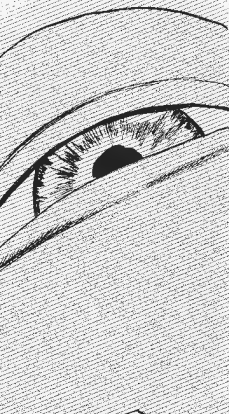
WHACK



MAN, DO I
LOVE BEING
A BULLY.

SHATTERING
THE DREAMS
OF LITTLE
KIDS, BREAK-
ING THEIR
PRIDE!

HA HA HA.
SO MUCH
FUN.



I'LL
SPARE
YOUR
LIFE IF
YOU HAND
OVER
THAT
ERYTHRO-
BLAST.
WHAT
D'YOU
SAY?

SO
WHAT'LL
IT BE,
KID?
I LIKE
KIDS
WITH
SOME
GUTS.



NOOO,
DON'T
DIE!!



THEN
D—



WHITE
BLOOD CELLS
PROTECT
OTHER CELLS,
EVEN IF IT
COSTS THEM
THEIR OWN
LIVES. I'M
GOING TO BE A
GREAT WHITE
BLOOD CELL
SOMEDAY!!

SOB
S"
T

GO TO
HELL...
I'D
NEVER
DO
THAT...!

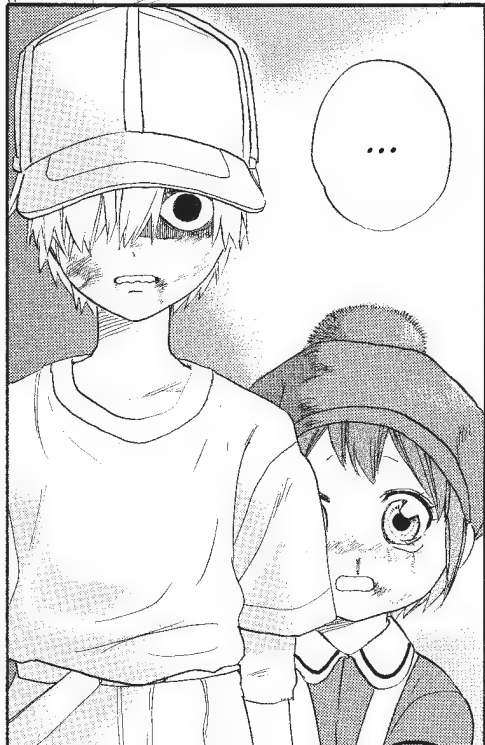
THAT'S
THE SPIRIT,
YOUNG
MYELOCYTE!

SLASH

WHITE
BLOOD, CR

GAAAAAH?!





わーん
WAAAH!

OH
BOY.

HEY,
MYELO-
CYTE!!

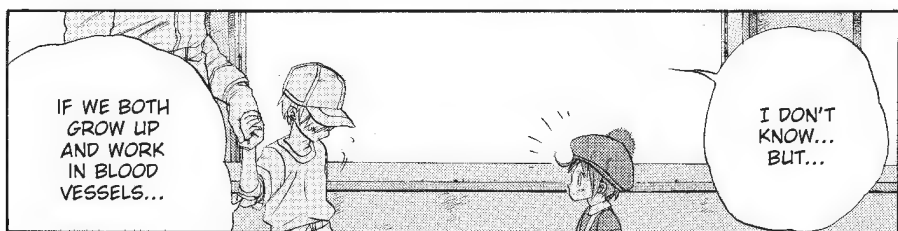
WAIT, MS.
MACRO-
PHAGE.

ALL
RIGHT.
LET'S
TREAT
YOUR
WOUNDS.

THANK
YOU, MR.
NEUTRO-
PHIL.

THANK
YOU FOR
SAVING
ME!

!







OH...
WE RUN
INTO EACH
OTHER A
LOT.

**WHITE
BLOOD
CELL...**

IT'S
YOU...



OH.



SLURP

I'VE GOT
SOME TIME
ON MY
HANDS.

TH-
THANK
YOU!!

FINE...
I'LL
WALK YOU
THERE.



HERE'S
A FRESH
CUP OF
TEA.

YOU'RE
ALWAYS
LOST.

WHAT, ARE
YOU LOST
AGAIN?

YES.
DO YOU
KNOW
WHERE
THE
MAIN
STREET
IS...?!

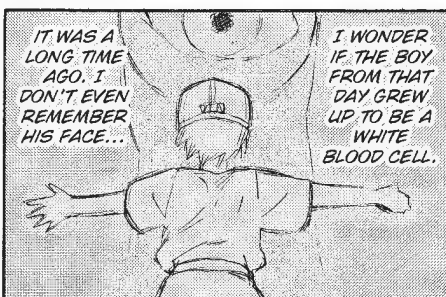


ちり
PEEK

COULD
IT
BE...



A WHITE
BLOOD
CELL...

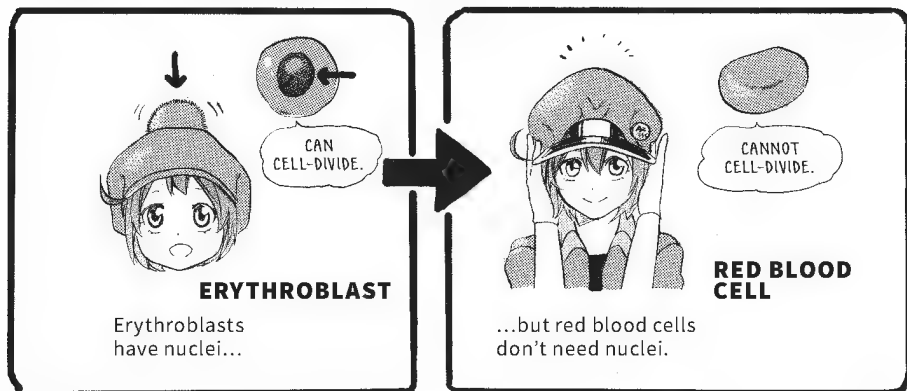


IT WAS A
LONG TIME
AGO. I
DON'T EVEN
REMEMBER
HIS FACE...

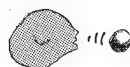
I WONDER
IF THE BOY
FROM THAT
DAY GREW
UP TO BE A
WHITE
BLOOD CELL.



ENUCLEATION OF ERYTHROBLASTS



This is called
enucleation.



This is a mark of
becoming a full-fledged
red blood cell.



Cells at
Work!
はたらく細胞



AAAAH!!!
HEEEELP!!!

NO
TROUBLE
TO
SPEAK
OF.

IT SURE
HAS BEEN
PEACEFUL
LATELY.

**White Blood Cell
(Neutrophil)**

His main job is to destroy
foreign substances that enter
the body from the outside,
such as bacteria and viruses.

IT'D
BE
NICE IF
THINGS
COULD
GO ON
LIKE
THIS...

TEA'S
GOOD.

WHEN...





SOME-
ONE
HELP!!!

TMP TMP

CHAPTER 9:
CANCER CELLS (PART I)



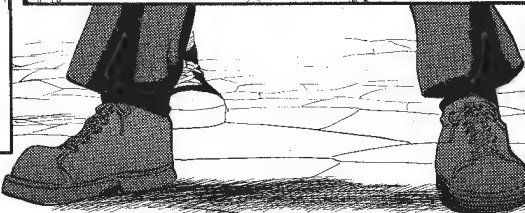
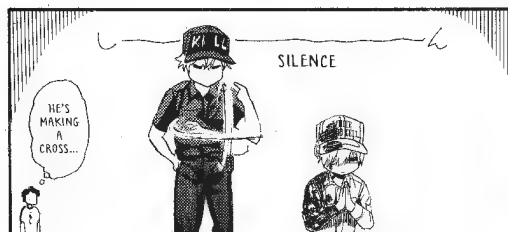
WHOA!
THAT CELL
IS BEING
CHASED BY
A WEIRD-
LOOKING
ONE!

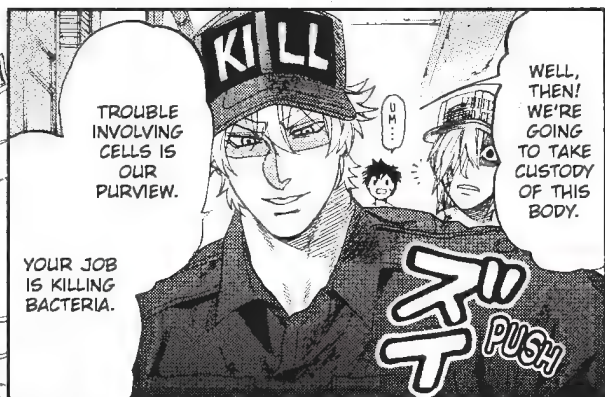
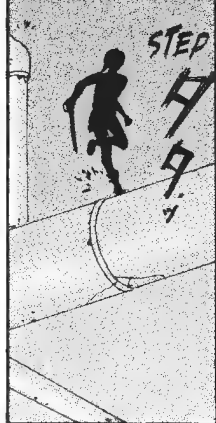


BLOOD CELL 143

HMPH...







WHAT THE—
GUH!!!



**NK
CELL!!**

**SORRY,
THERE
WASN'T
A GOOD
SPOT TO
LAND.**

**NK Cell (Natural
Killer Cell)**
Patrols the whole
body for cancerous
or virus-infected
cells to attack.



I BET THERE'S MORE OF THEM.

WHAT...?



HEH... JUST LIKE I THOUGHT.

GUYS LIKE THIS CAN MULTIPLY LIKE CRAZY.

THIS IS NO ORDINARY VIRUS.

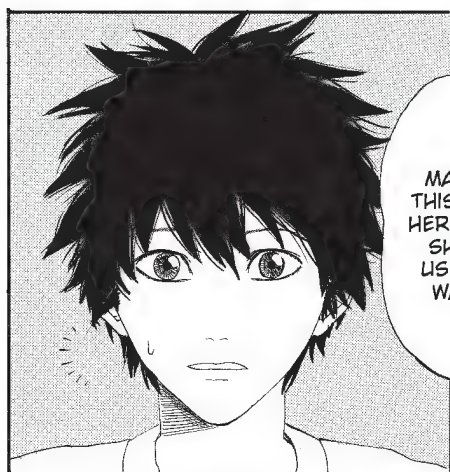


COUGH YOU... WHAT DO YOU WANT... COUGH

GRAB

LEMME SEE THAT BODY.

HUH?!



MAYBE THIS GUY HERE CAN SHOW US THE WAY?



WHY DIDN'T YOU TELL US SOONER, DUMBASS?!

UH... TH- THAT'S RIGHT!

THERE'S MORE LIKE THEM NEAR MY HOUSE...

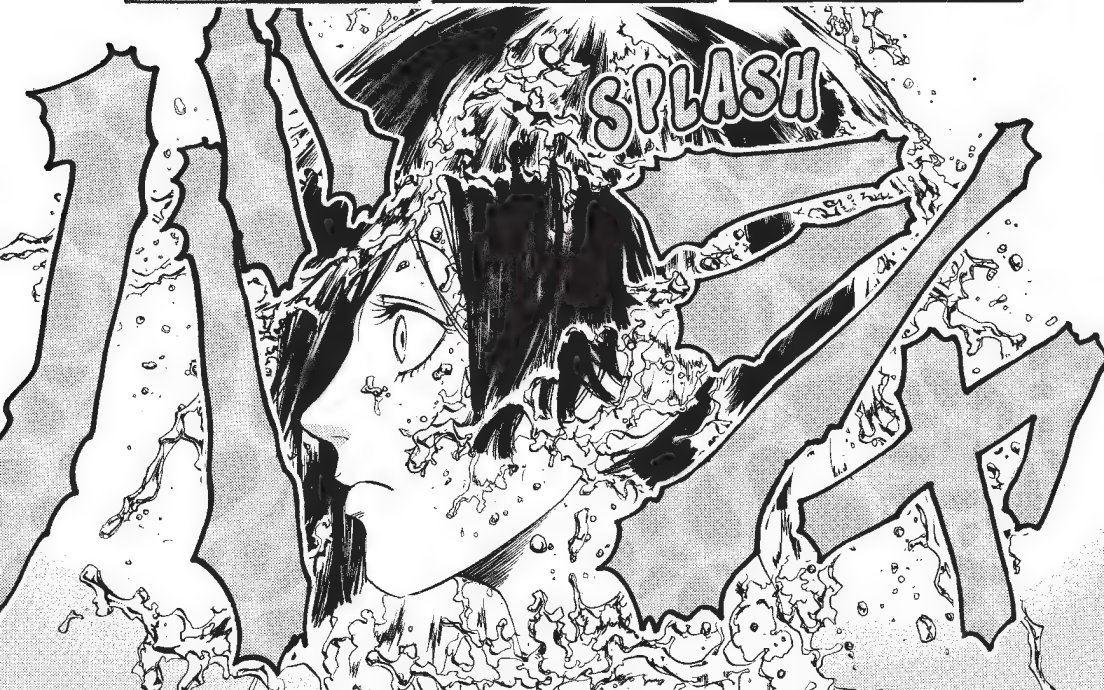
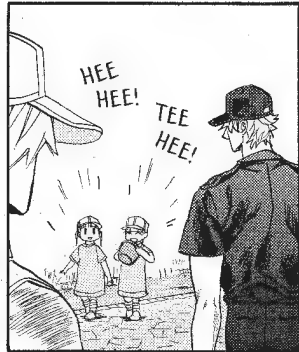
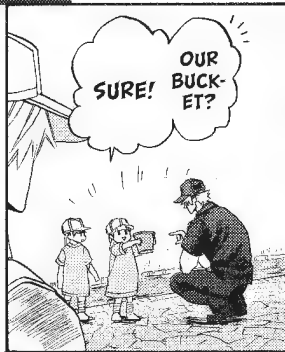
I WAS TRYING TO SAY THAT ALL ALONG.

REAL- LY?!

S- SORRY.

HEY, YOU. THIS WASN'T THE ONLY INFECTED CELL, WAS HE?

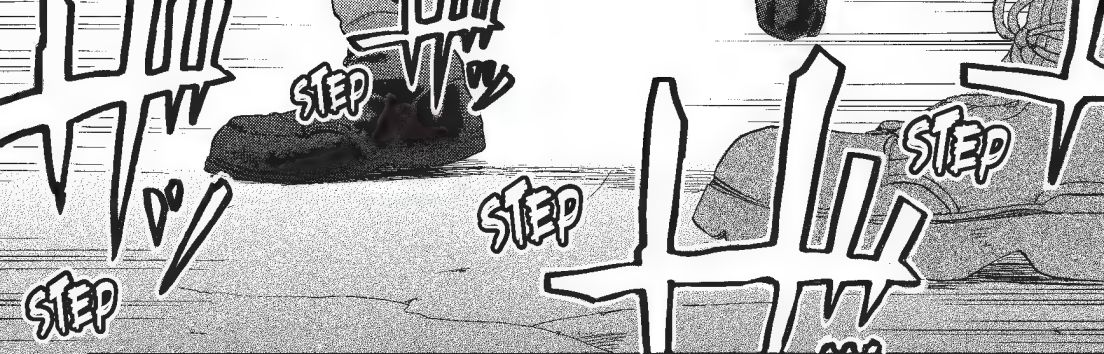




DRIP
ポ
ッ







DOES THIS
LOOK LIKE
COMPETING
TO YOU?!

WHAT'RE
YOU
TALKING
ABOUT?

WHY'RE
YOU
WALKING
SO
FAST?

THIS
ISN'T A
SPEED-
WALKING
COMPETITION,
YOU
KNOW.

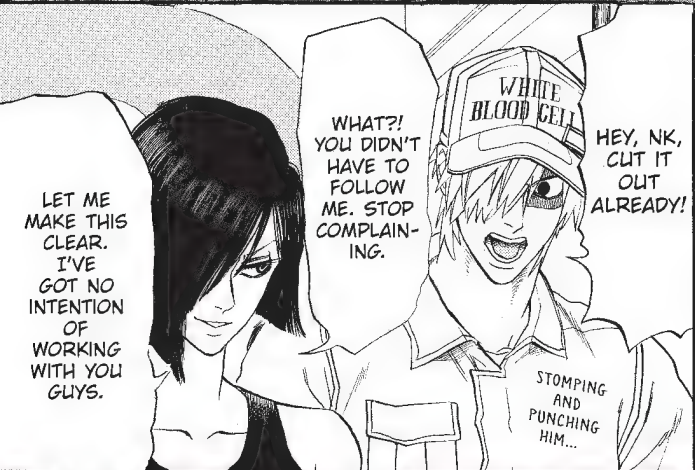


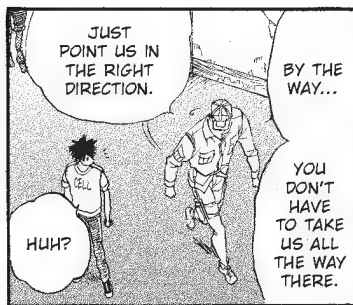
ROLL
から
ROLL
から
ROLL
から

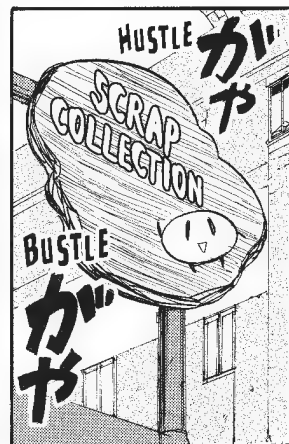
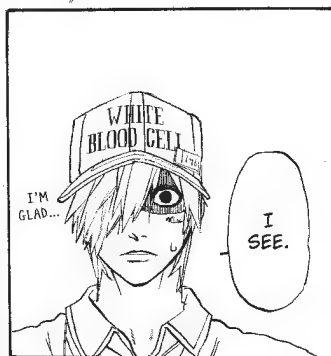
HEY, WHAT
THE...?! YOU
STOPPED
ALL OF A
SUDDEN...

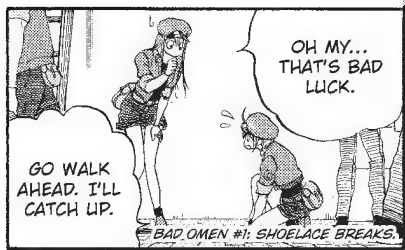
WHERE'RE
YOU
GOING
ON YOUR
OWN,
DUMMY?!

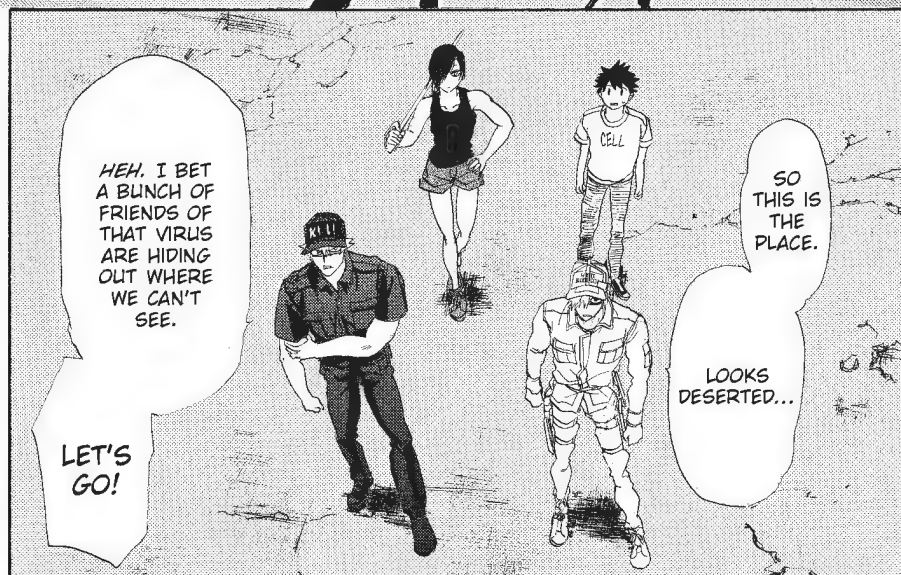
HEY
KILLER,
LOOK
WHERE
YOU'RE
GOING!!













THIS
DOESN'T
FEEL
RIGHT...

WHAT'S
THE
PLAN?



YOU'RE
RIGHT...



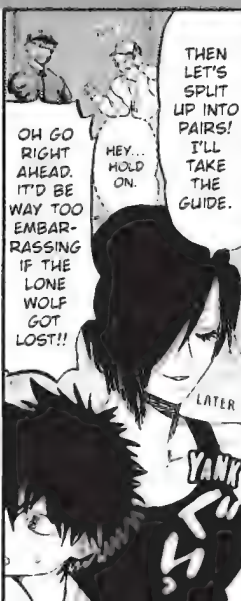
THIS ISN'T A
FIGHT! IT'S
A VISCERAL
REACTION!

I CAN'T
CONCENTRATE
ON
OUR WORK
WITH HER
AROUND

S-
STOP
FIGHT-
ING!

OH,
GOODIE.
NOW I
CAN STOP
BABY-
SITTING
YOU.
HA HA.

COME ON,
NEUTRO-
PHIL! WE'LL
GO THAT
WAY!!



OH GO
RIGHT
AHEAD.
IT'D BE
WAY TOO
EMBAR-
RASSING
IF THE
LONE WOLF
GOT
LOST!!

HEY...
HOLD
ON.

THEN
LET'S
SPLIT
UP INTO
PAIRS!
I'LL
TAKE
THE
GUIDE.

LATER

YANK



HOW ABOUT
WE CALL IT IN
TO HQ AND
THE THREE OF
US DO SOME
RECONNAIS-
SANCE—

THREE
OF US?!!
NO
FRICKIN'
WAY!!!



PEH!!!



WELL,
THEN.

MAN, HE'S
ANNOYING.



HEY, YOU'RE
LETTING
PERSONAL
FEELINGS
COMPROMISE
OUR
POSITION!!
WE HAVE TO
GO BACK!!

IT'S A
MATTER
OF COM-
PATIBILITY,
OKAY?!

WORKING
WITH HER
COMPROMISES OUR
POSITION.



WHY DON'T
WE GET
STARTED?



HUH...?



...

CELL

OF
COURSE,
IF YOU
WANT TO
DIE IN THAT
DISGUISE,
THAT'S UP
TO YOU.



NO
PARTNERS
TO SLOW
ME DOWN,
NO CROWD
TO GET IN
OUR WAY.

COME ON,
I'LL TAKE
YOU ON.

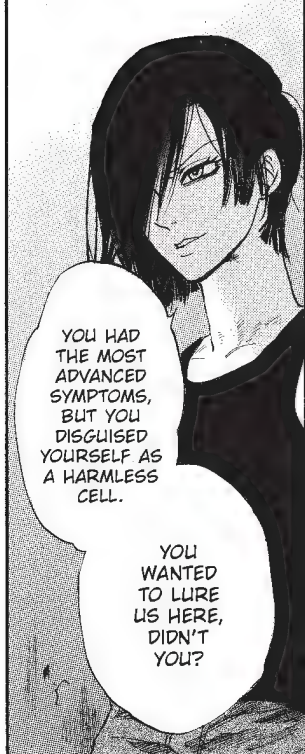


**SHOW
ME
YOUR
TRUE
FORM.**



**SO YOU
KNEW ALL
ALONG.**

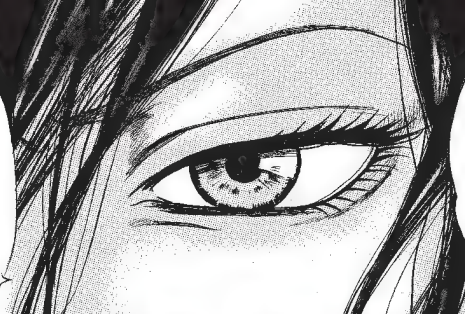
...





...TO
TAKE CARE
OF THE
THREE OF
YOU AT
ONCE.

I WAS
HOPING...



THEY WOULD
HAVE SLOWED
ME DOWN,
THAT'S ALL. THEY
DIDN'T EVEN
REALIZE WHAT
YOU WERE.

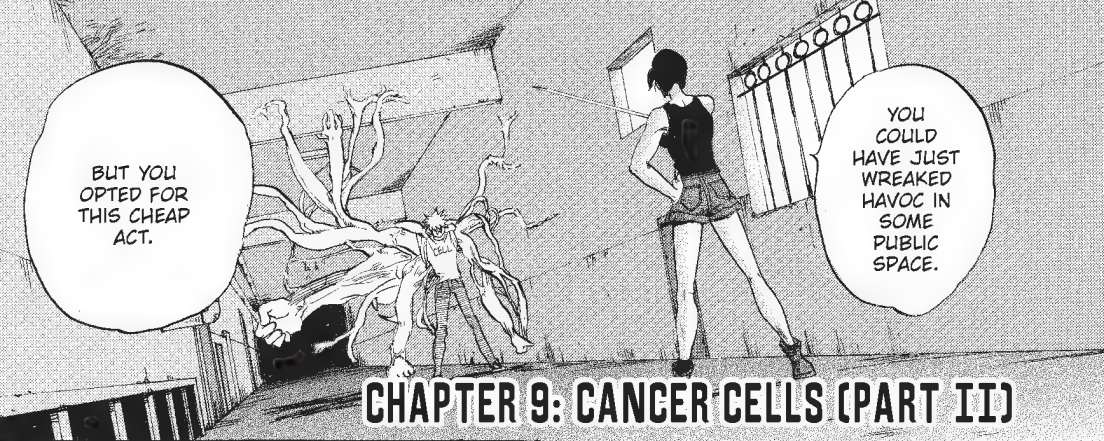
HEH...
I WASN'T
GETTING
THEM OUT
OF HARM'S
WAY.



YOU BUG-
RIDDEN,
DEFECTIVE
CANCER
CELL...!!

Cancer Cells

Cells that multiply uncontrollably due to a genetic anomaly. They overstep the boundaries with neighboring cells in a process called infiltration. Advanced infiltration leads to metastasis, in which cancer cells travel to other parts of the body through the bloodstream and lymphatic system. This eventually leads to the cancer spreading to vital organs and endangering the life of the organism.



BUT YOU
OPTED FOR
THIS CHEAP
ACT.

YOU
COULD
HAVE JUST
WREKED
HAVOC IN
SOME
PUBLIC
SPACE.

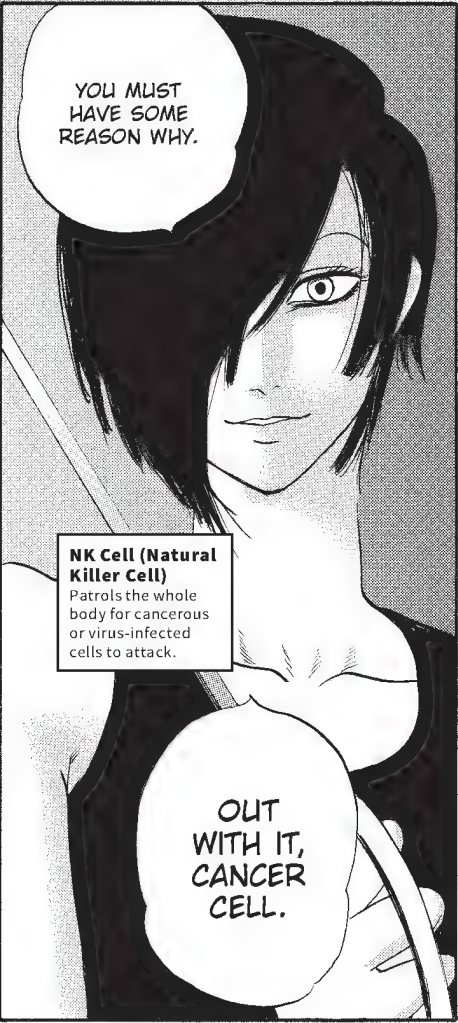
CHAPTER 9: CANCER CELLS (PART II)



Cancer Cells
Cells that multiply
uncontrollably due to
a genetic anomaly.

HEH...
HEH
HEH
HEH
HEH.

I
DON'T
THINK
SO.



YOU MUST
HAVE SOME
REASON WHY.

**NK Cell (Natural
Killer Cell)**

Patrols the whole
body for cancerous
or virus-infected
cells to attack.

OUT
WITH IT,
CANCER
CELL.



I WORKED
REALLY
HARD TO
KEEP FROM
LAUGHING
AT YOUR
LITTLE ACT!

YOU
GOTTA TRY
HARDER
TO MAKE
IT WORTH
MY—

HEY!
WHAT'S
WITH THAT
WEAK-ASS
ATTACK?!

SLASH SLASH

!

PSHHT

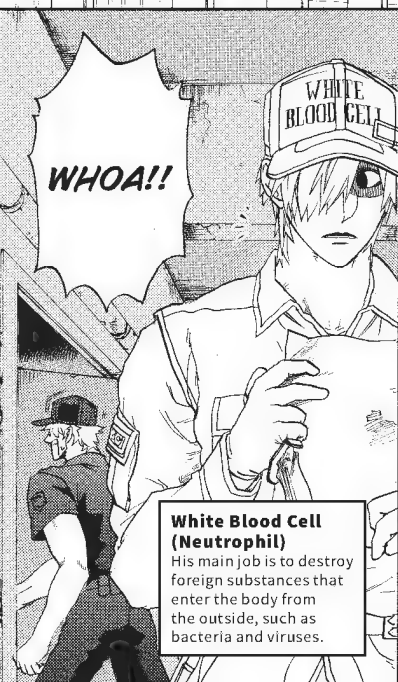
ZOOM

SMACK

BFF!

ZLURP





White Blood Cell (Neutrophil)
His main job is to destroy foreign substances that enter the body from the outside, such as bacteria and viruses.





Let's divide.
Don't run
No crying
Take care of your copies
No running

Make more of us
3-phase who don't divide
Leave papers up

Keep voice down

!

Killer T Cells (Cytotoxic T Cells)
Deployed on the order of a Helper T Cell. Professional killers who recognize and destroy foreign substances such as transplanted cells, virus-infected cells, and cancer cells.

ABCDEF G
HIJKLMN
OPQRST
UVWXYZ
No loud noises

Quiet

QUIET

DO THE CELLS HERE IGNORE THE MULTIPLICATION PROTOCOL?!

WHOA!
HEY, LOOK AT THIS!

How to cell-divide

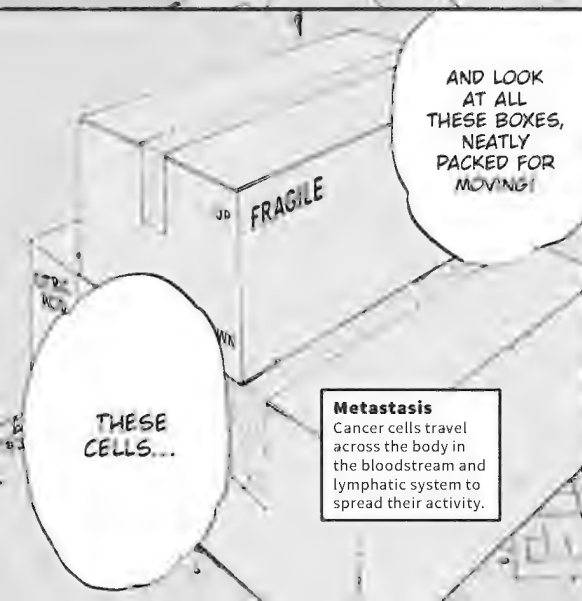
Multiplication
Cancer cells cannot control cell division, and multiply endlessly.

YEEH!

YEAH... THERE MUST BE TONS OF THEM. THIS ISN'T NORMAL.

WHO! BLOOD CELL!

CANCER CELL

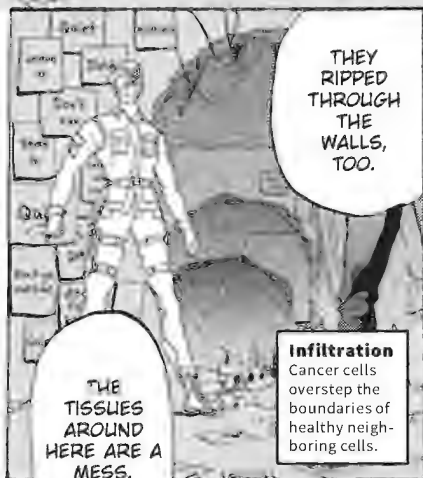


THESE
CELLS...

Metastasis

Cancer cells travel across the body in the bloodstream and lymphatic system to spread their activity.

AND LOOK
AT ALL
THESE BOXES,
NEATLY
PACKED FOR
MOVING!



THE
TISSUES
AROUND
HERE ARE A
MESS.

THEY
RIPPED
THROUGH
THE
WALLS,
TOO.

Infiltration

Cancer cells overstep the boundaries of healthy neighboring cells.

THIS
IS NO
VIRUS!

How to
Cell-Divide

MULTIPLICATION,
INFILTRATION,
AND
METASTASIS!



THIS IS
CANCER!







HOW
DENSE
ARE
YOU?

?!



WHAT
HAD-
PENED
TO
HIM?!

NK!
WHAT
ABOUT
THAT
OTHER
CELL?!



LUNGE

SMASH



KTCH



NOW IT'S
THREE
ON ONE,
YEAH?

HEH. SO
THE THREE
OF YOU ARE
TOGETHER
AGAIN.

LADY, YOU
WERE ASKING
WHY I WENT
THROUGH
ALL THIS
TROUBLE.

NOW THAT
YOU'RE ALL
HERE, LET
ME TELL
YOU SOME-
THING.

THAT WAS
AN ACT?
HE WAS IN
CAHOOTS
WITH
THE OTHER
CELL.

SO HE'S
A CANCER
CELL...?!
NK KNEW
ALL
ALONG?!

SO WHEN HE
WAS BEING
CHASED
EARLIER...

I
WANTED
YOU
IMMUNE
CELLS TO
GET A
TASTE...

...OF HOW
IT FEELS TO
BE GANGED
UP ON AND
KILLED!!





SO HE'S
ENGULFED
THE WHOLE
BUILDING....!!

AAUGH!

RUMBLE

RUMBLE

RUMBLE

RUMBLE

WHAAT?!!

HA HA
HA HA
HA HA
HA HA!

ELL



HEH...
HEH
HEH
HEH...

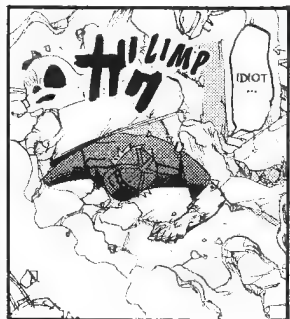
AH
HEH
HEH
HEH
HEH

GH... AH HA
NHH... HA...



NK...

Y-
YOU...



IDIOT...

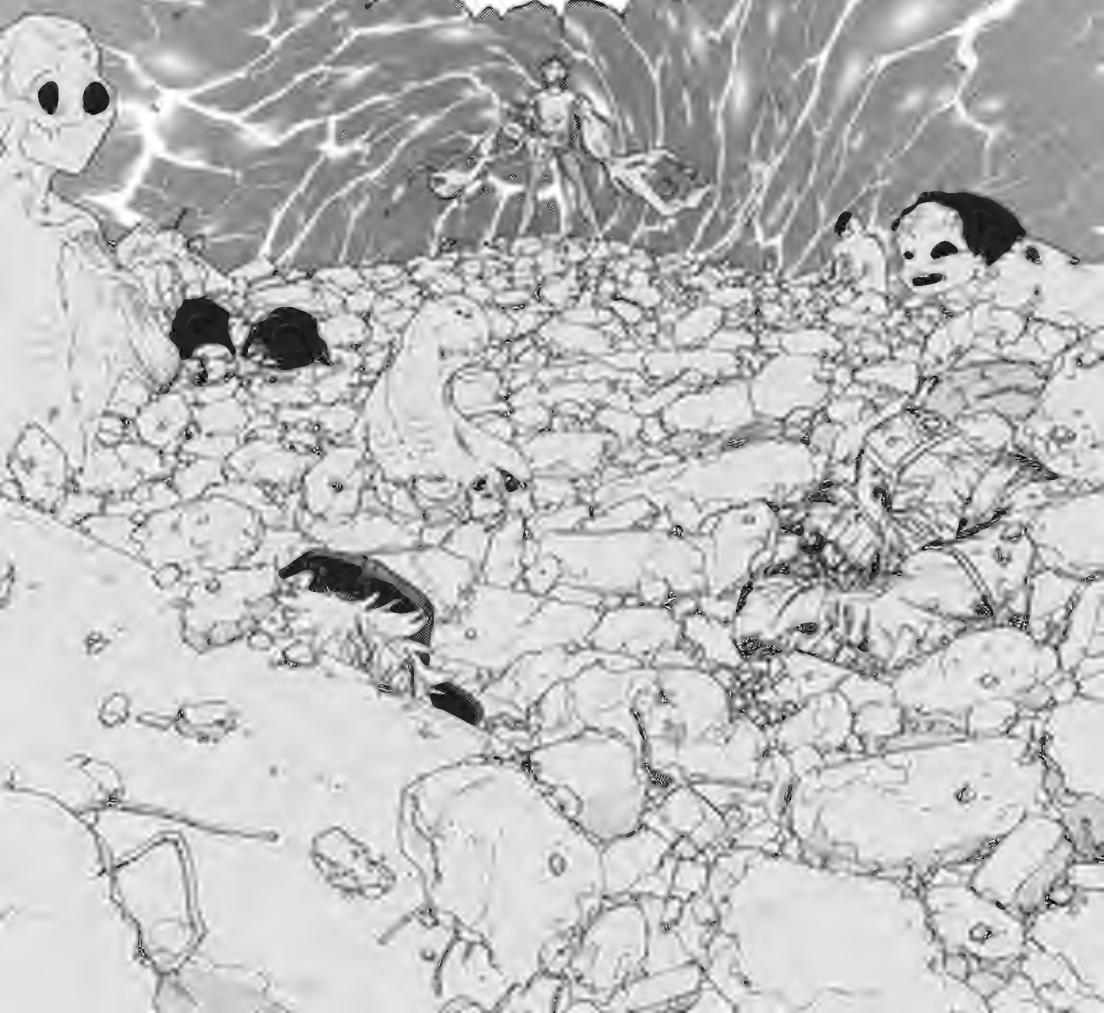


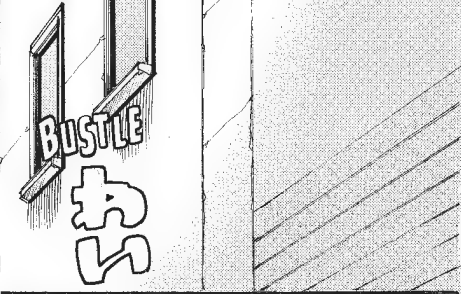
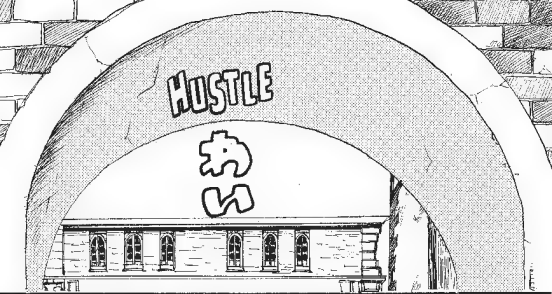
THIS IS WHY
I WANTED
TO DO THIS
ALONE.

YOU WIMPS
WOULD JUST
GET HURT
TRYING TO
FIGHT THIS
GUY.

ガラ
CRMBL
CRMBL
ガラ

**RAAAA
AAAAA
AAAH!!**



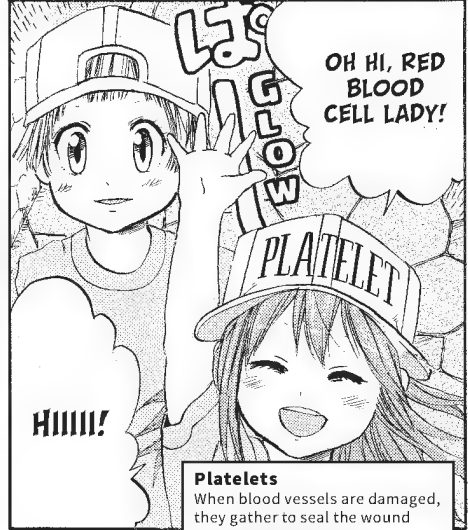


OH, HELLO
THERE,
LITTLE
PLATELET!

HI
THERE!
♪

Red Blood Cell

She transports oxygen and
carbon dioxide through
blood circulation.



OH HI, RED
BLOOD
CELL LADY!

HIIIIII!

Platelets

When blood vessels are damaged,
they gather to seal the wound
and stop the bleeding.



IT
SURE
IS.

IT
SURE IS
PEACEFUL,
SENPAI.



PINCH
PINCH
POKE
POKE
ぷにぷに
ふんぷん

WHEE!
☆

AHHHH,
THAT
TICKLES!
☆

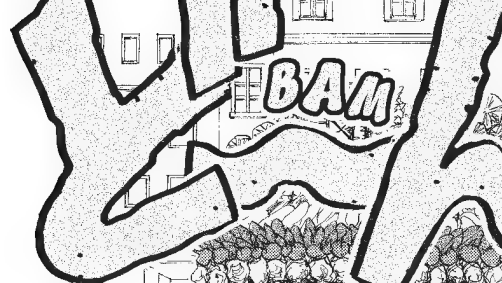


OOPS,
SORRY.

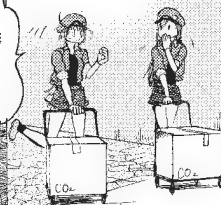
OH, NO
WORRIES.

WOBBLE
WOBBLE
NO
NO
NO

THAT BAD
FEELING
I HAD
EARLIER...
WAS THAT
JUST MY
IMAGINA-
TION...?



HE WAS
HAVING SOME
TROUBLE.
MAYBE WE
COULD HELP
HIM CARRY
HALF?

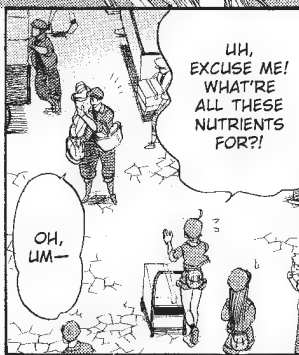


DID YOU
SEE THAT?
HE WAS
CARRYING
A TON OF
NUTRIENTS.



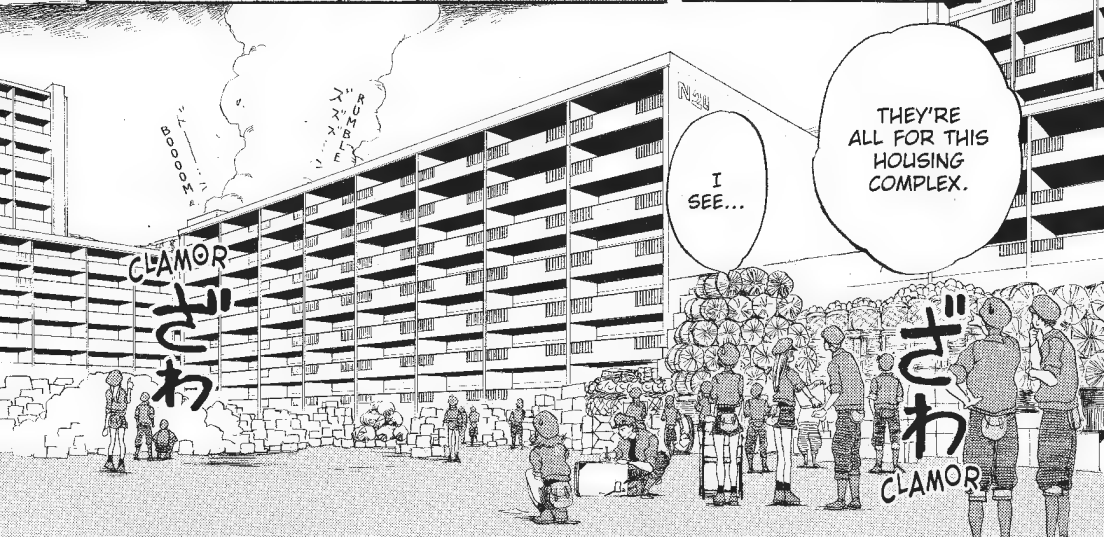
BUT
THERE'RE
A LOT
OF HUGE
ORDERS.
ONE AFTER
ANOTHER.

WE THINK
IT'S WEIRD,
TOO,
ACTUALLY.



UH,
EXCUSE ME!
WHAT'RE
ALL THESE
NUTRIENTS
FOR?!

OH,
UM—



GLAMOR
ざわ

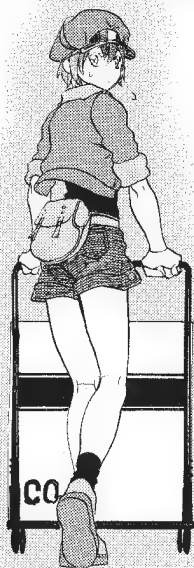
I
SEE...

THEY'RE
ALL FOR THIS
HOUSING
COMPLEX.

ざわ
GLAMOR

Proinflammatory Cytokines

Cancer cells release an enormous amount of these chemicals. By doing so, nutrient-rich blood flows preferentially to the cancer and contributes to the multiplication of cancer cells. If this situation is prolonged, it upsets many balances inside the body.





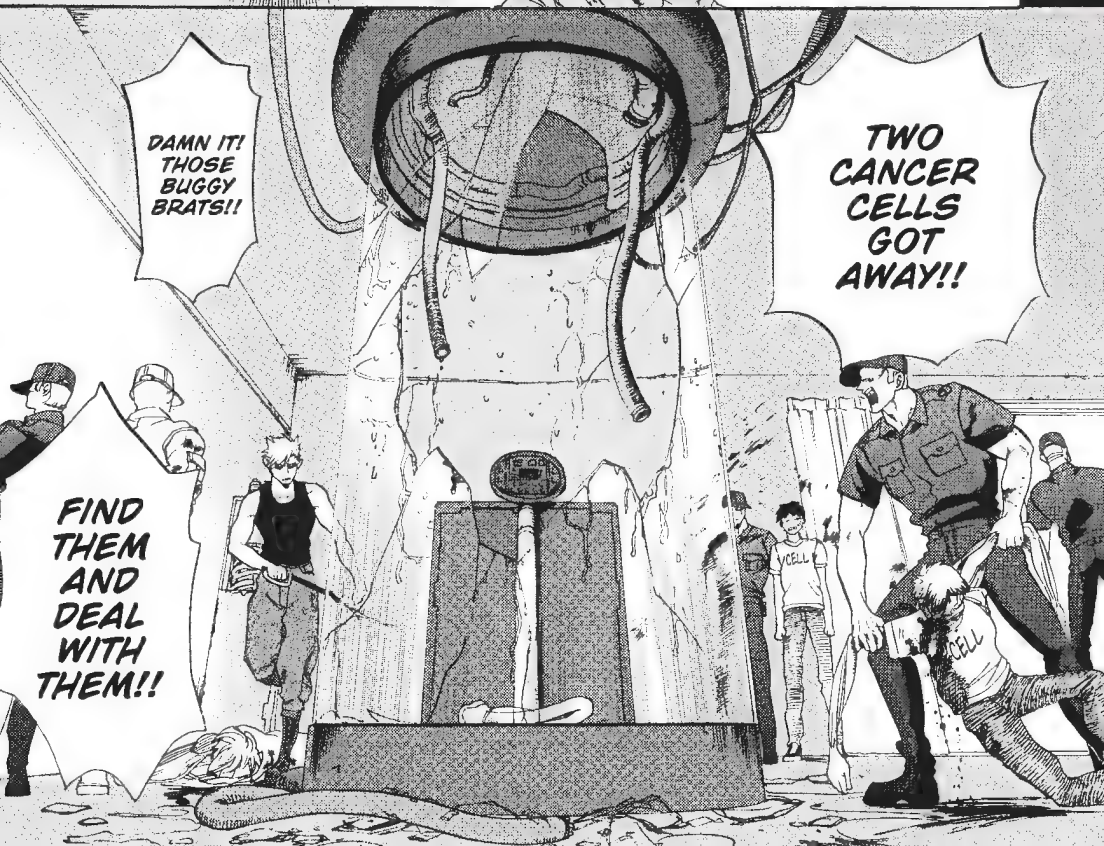


**DIE, YOU
BUGGY
BASTARD!!**

**DAMN IT!
THOSE
BUGGY
BRATS!!**

**TWO
CANCER
CELLS
GOT
AWAY!!**

**FIND
THEM
AND
DEAL
WITH
THEM!!**





The number of cancer cells made in a day

Cancer cells are made when normal cells make errors during cell division. Even in healthy people, thousands are made every day.





SNEAK

さ、

!



HERE'S
ONE!
CATCH
IT!!

カ
KLAK



OUCH!

H-
HEY!!

ど
THUD



THERE'S
ONE LEFT...
FIND IT NO
MATTER
WHAT...AND
KILL IT!!

DIE, YOU
BUGGY
BASTARD!!

アアアアア!!



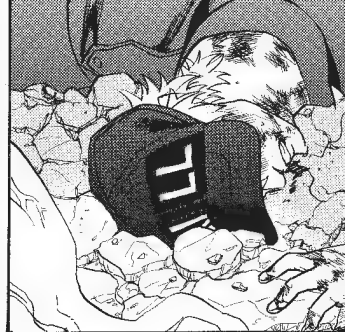
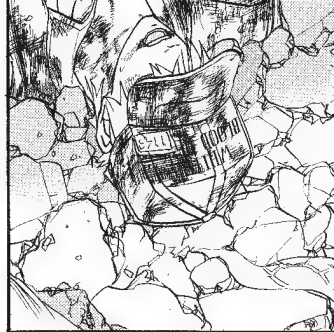
AAAUGH!

GAAAH!!!

S
P
L
A
T

SHOOM

YOU'RE
THE ONES
WHO
DESERVE
TO DIE!



WE'LL MULTIPLY
AND KILL EVERY
LAST ONE OF YOUR
FRIENDS! AND THEN
YOU NORMAL CELLS
WILL KNOW HOW IT
FEELS AT THE VERY
BOTTOM—TO BE
THE SLAUGHTERED,
INSTEAD OF THE
BLUTCHER.



BYE, NOW...
WE'RE GOING
TO SPREAD ALL
OVER THE BODY
THROUGH THE
BLOOD AND
LYMPHATIC
VESSELS.



I DON'T
CARE
ABOUT
THAT.

DON'T BE STUPID!
THERE'S NO WAY
MALFUNCTIONING
CELLS LIKE YOU
CAN KEEP THIS
BODY RUNNING!

I'M GOING
TO DIE
ANYWAY.

THE ONLY
THING
WAITING FOR
YOU AT THE
END OF THIS
ROAD...IS
RUIN!!



TA-DAAA!

AWWW,
I MISSED.
I WAS
AIMING
FOR HIS
HEAD!

ARE YOU
GUYS ALL
RIGHT?!!



WHOA!
THERE
THEY ARE!
CANCER
CELLS!



R-RED
BLOOD
CELL?!



!!



OH! WHITE
BLOOD
CELL,
YOU'RE HERE,
TOO!!

JUST WHEN
I THOUGHT I DIDN'T
SEE YOU AROUND...

AH HA HA...
JUST LIKE
YOU SAID,
RED BLOOD
CELL. LOTS
OF STRANGE
CELLS HERE.

IT'LL BE SUCH
FUN TO KILL
THEM ALL.

Macrophage

A type of white blood cell. They catch and kill bacteria and foreign substances, and find information on antigens and immune response.



**IT'S ALL
OVER NOW,
CANCER
CELLS!!!**

**B Cell (Antibody-
producing cell)**
Makes weapons called
antibodies to fight antigens.



**SURRENDER
PEACE-
FULLY!!**

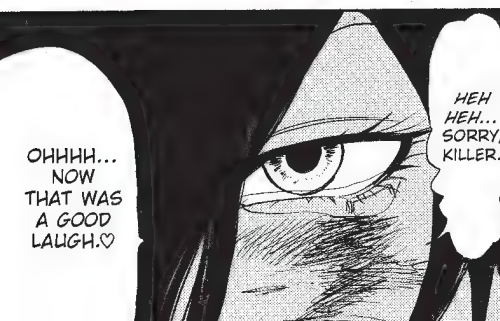
**SURREN-
DER...
YOU
MEAN DIE,
RIGHT?**



**CANCER
CELLS! YOU'RE
COMPLETELY
SURROUNDED
BY US IMMUNE
CELLS!**

Helper T Cell
Notifies other cells of foreign
enemies and their weaknesses.







ALL THIS
LAUGHING'S
GOT ME
GOOD AND
ENERGIZED
....!!

SHO


OOM



OH, THAT'S
RIGHT.
NK CELLS...



WH-
WHAT'S
HAPPEN-
ING...?!



YOU
DON'T
STAND A
CHANCE
NOW! YOU
SHOULD
KNOW,
NK CELLS
LIKE
ME...

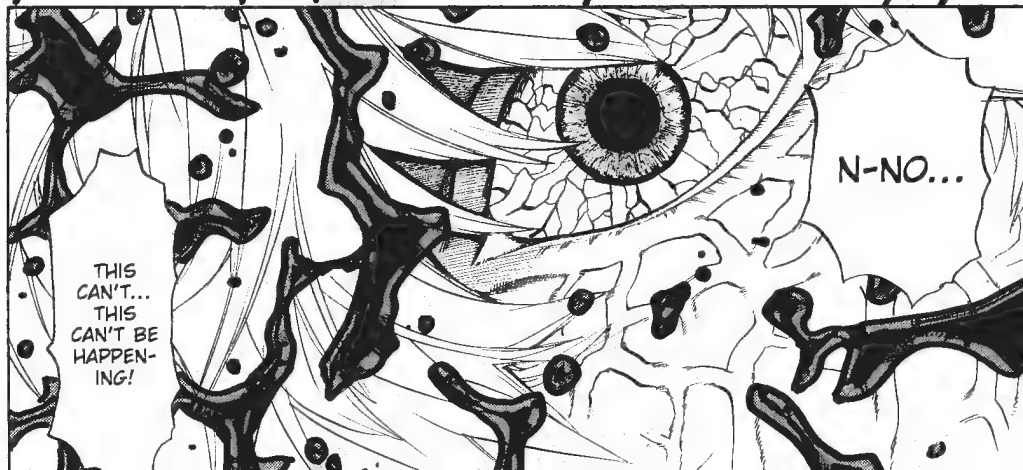


SLASH

Activation of NK Cells

Laughter stimulates the diencephalon to trigger the rapid production of neurotransmitters called "neuropeptides." These chemicals attach to the surfaces of NK cells, activating them.

...ARE
ACTIVATED BY
LAUGHING!!!



THIS
CAN'T...
THIS
CAN'T BE
HAPPEN-
ING!

N-NO...



THUMP
ダ





WHAT DO
YOU WANT
WITH ME?

ARE YOU
GOING TO
GUILT TRIP
ME FOR
LYING TO
YOU?

YOU'RE
THAT
WHITE
BLOOD
CELL
FROM
BEFORE,
RIGHT?

MAN,
AND I
WAS SO
CLOSE.

WAIT...
HE
DID HE
REALLY?

IF YOU
HAVE
ANY LAST
WORDS,
I'LL
HEAR YOU
OUT...

I GUESS
YOU CAN'T
MOVE BUT
YOU STILL
HAVE THE
ENERGY
TO TALK.

SAW A
HUMAN
SIDE OF
YOU.



I JUST...
I GUESS
I REALIZED
YOU'RE A
CELL, TOO.

HOW LONG'RE
YOU GOING TO
STAY FROZEN UP
LIKE THAT?

OH,
SORRY.

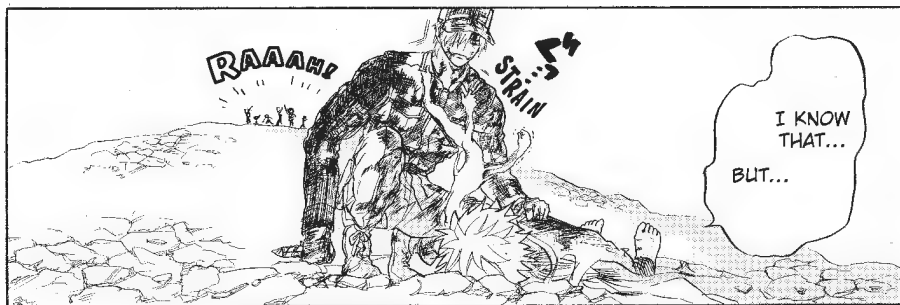
WHEN I WAS
PRETENDING TO BE
A NORMAL CELL AND
YOU SAVED ME, I
WAS ACTUALLY HAPPY!
THAT WAS THE
FIRST TIME IN MY
LIFE THAT ANYONE
HELPED ME...


THERE ISN'T
A SINGLE CELL
IN THIS BODY
WHO'LL GO
OUT OF THEIR
WAY TO HELP
SOMEONE LIKE
ME...!

HEH...
IT'S
ALMOST
LIKE
YOU'RE
A NICE
GUY.

LET'S
SEE IF I CAN
CAUSE SOME
PANGS IN
THAT PLINY
CONSCIENCE
OF YOURS!

ARE YOU
TRYING TO
FEEL LESS
GUILTY?
GUYS LIKE
YOU GET
ON MY
NERVES.





I WAS BORN
DEFECTIVE BECAUSE
OF SOMEONE ELSE'S
MISTAKE...HUNTED BY
THE IMMUNE CELLS
THAT SHOULD'VE
BEEN MY FRIENDS...

WHY
WAS I
BORN...?!

AND I
FOUGHT...
AND LOST...
AND I'LL
DISAPPEAR
FROM THIS
WORLD
WITHOUT A
TRACE.



OH HEY,
RED
BLOOD
CELL.

IS THAT...
IS HE OUR
ENEMY?

WHITE
BLOOD
CELL, ARE
YOU ALL
RIGHT?!

AH!

WHAT
IS

I FINISHED
HIM OFF
ALREADY.

NOTHING
TO BE
AFRAID
OF.

IS THAT
A CANCER
CELL...?
SO SCARY.

AND I'LL
KILL YOU...!
UNTIL THEN
JUST KEEP ON
BEING CARE-
LESS WITH
YOUR HEALTH!

FOR
NOW...

SOMEDAY...
I'LL COME
BACK TO
THIS BODY!
NO MATTER
WHAT IT
TAKES...!!

BY THE
WAY, RED
BLOOD
CELL...

PLEASE
DON'T
COME
BACK.
REST IN
PEACE,
CANCER
CELL.



YOU'RE
WEL-
COME!



THANKS.
YOU
SAVED
US.

YOU
MUST HAVE
BEEN THE
ONE WHO
GATHERED
ALL THE
OTHER
IMMUNE
CELLS.

COME BACK AS
MANY TIMES
AS YOU WANT,
CANCER CELL!

OH...
IT WAS
NOTHING.

OH, WHAT
DID YOU
TWO TALK
ABOUT
ANYWAY?



CHAPTER 9: END

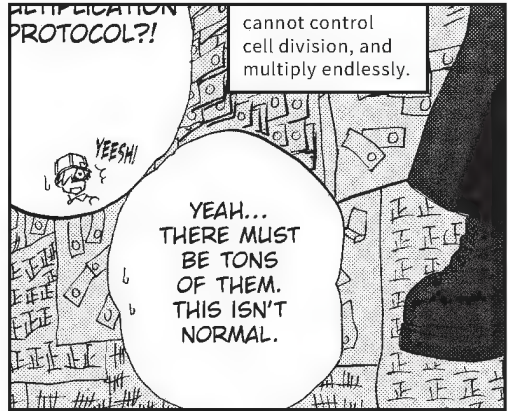


TRANSLATION NOTES

Tally marks

Page 124

The Japanese character 正 (meaning "right," "true," or "correct") is commonly used to count to five, just like tally counts using four vertical lines and one slash through them for "five" (𠄎).



Buggy bastard

Page 140

In the Japanese edition, the immune cells insult the cancer cell by calling him *baguri-yaro*. The term "baguri" comes from the verb "baguru," which is a slang term describing what software does when it has bugs—an apt insult for a renegade cancer cell. Baguri also may echo the term *pakuri*, meaning plagiarism, which would make sense given that cancerous cells are poor copies of the original.

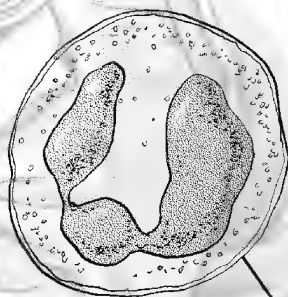
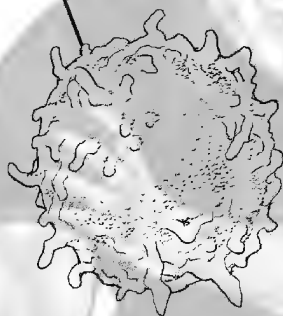
Aw, crab

Page 156

In his final moments, the cancer cell makes a terrible pun. He says "Gaan," which is an exclamation expressing shock or dismay. "Gan" is also the Japanese word for cancer. In this version, he murmurs "crab," the Latin term for which gives us the word "cancer" (and is the namesake for the constellation).



**KILLER
T CELL**



**WHITE
BLOOD
CELL**

DING DONG
E-75

A WEIRD BACTERIUM
APPEARS!

NEXT VOLUME!

RED
BLOOD
CELL
IN A
BAD
MOOD?

A BATTLE FOR INTESTINAL
SUPREMACY?
WHAT DOES THAT EVEN MEAN?!

A NEW COMPANION
APPEARS!

KILLER
T CELL'S
MYSTE-
RIOUS
PAST!

FOOT FELL
ASLEEP...

BITTEN
BY A
MOSQUITO!

Cells at Work!

はたらく細胞

AKANE SHIMIZU

VOLUME
3
COMING
SOON!

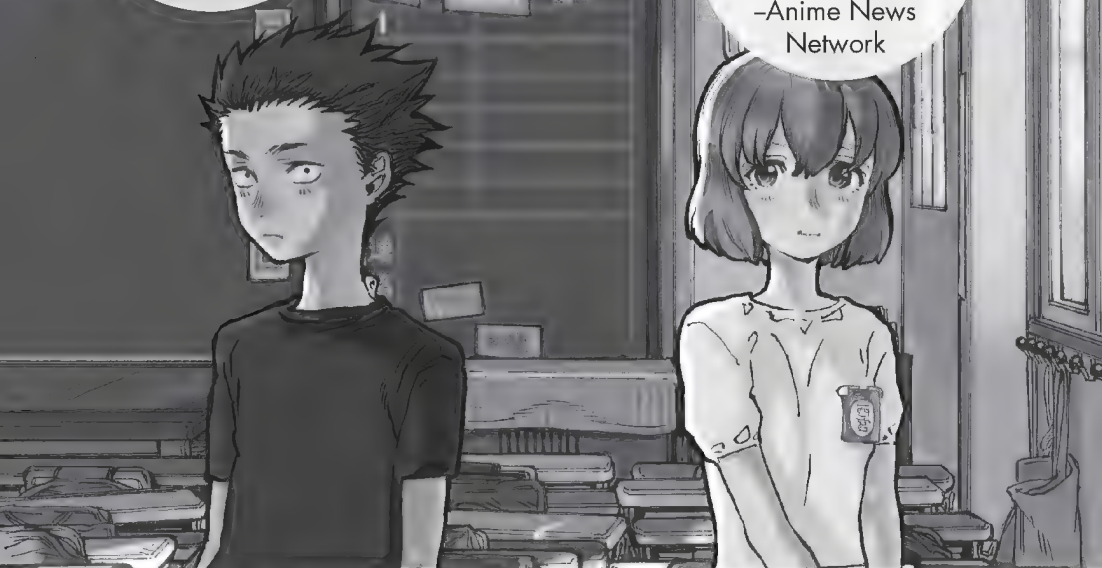
a Silent Voice

KODANSHA
COMICS

"A harsh and biting social commentary... delivers in its depth of character and emotional strength." -Comics Bulletin

"The word heartwarming was made for manga like this."
-Manga Bookshelf

"A very powerful story about being different and the consequences of childhood bullying... Read it."
-Anime News Network



Shoya is a bully. When Shoko, a girl who can't hear, enters his elementary school class, she becomes their favorite target, and Shoya and his friends goad each other into devising new tortures for her. But the children's cruelty goes too far. Shoko is forced to leave the school, and Shoya ends up shouldering all the blame. Six years later, the two meet again. Can Shoya make up for his past mistakes, or is it too late?

Available now in print and digitally!

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DON'T MISS THE MOST ACCLAIMED ACTION MANGA OF 2013!

"Gripping doesn't begin to describe *Vinland Saga*.
5 stars."
—ICv2

"Deeply engrossing... If you have any interest at
all in Vikings, the Medieval period, or pirates, this
is not a series you want to miss."

—Anime News Network

"The art is gorgeous, a combination of beautiful
cartooning and realistic backgrounds. Yukimura
is also a master of pacing, both in frenetic battle
scenes and charged emotional moments."

—Faith Erin Hicks, *Friends With Boys*

"For those who love *Berserk*, you'll love this too...
Worth the long wait."

—A Case Suitable for Treatment

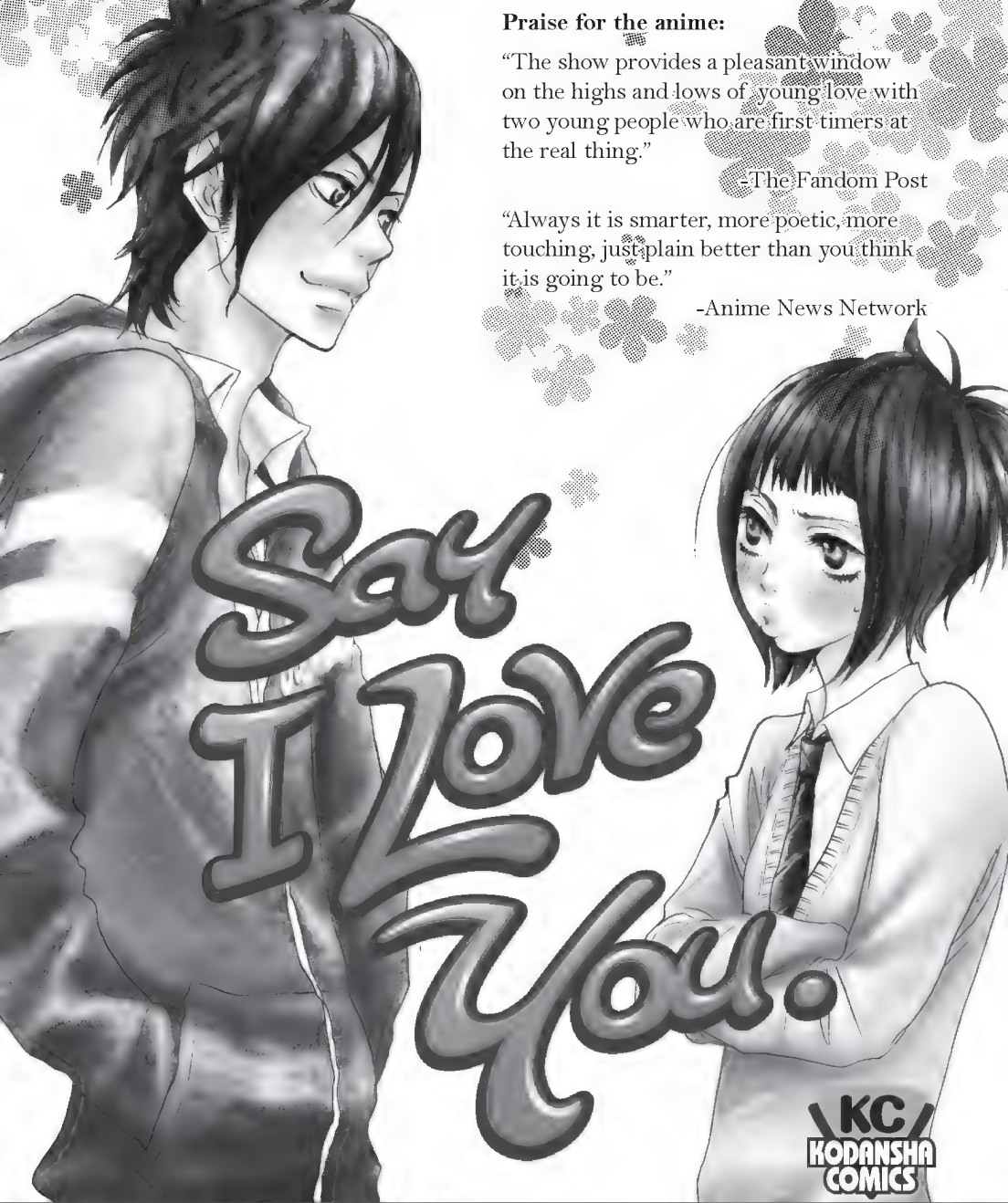
"It will be impossible to stop watching this story
unfold."
—Japan Media Arts Awards jury



**A VIKING EPIC FROM THE
AUTHOR OF "PLANETES"**

VINLAND SAGA

AVAILABLE NOW IN HARDCOVER



Praise for the anime:

"The show provides a pleasant window on the highs and lows of young love with two young people who are first timers at the real thing."

-The Fandom Post

"Always it is smarter, more poetic, more touching, just plain better than you think it is going to be."

-Anime News Network

KC
KODANSHA
COMICS

Mei Tachibana has no friends — and says she doesn't need them!

But everything changes when she accidentally roundhouse kicks the most popular boy in school! However, Yamato Kurosawa isn't angry in the slightest — in fact, he thinks his ordinary life could use an unusual girl like Mei. But winning Mei's trust will be a tough task. How long will she refuse to say "I love you"?

PRAISE FOR THE ANIME!

"This series never fails to
put a smile on my face."

-Dramatic Reviews

"A very funny look at what happens when
two strange and strangely well-suited people
try to navigate the thorny path to true love
together."

-Anime News Network



My Little Monster

OPPOSITES ATTRACT...MAYBE?

Haru Yoshida is feared as an unstable and violent "monster." Mizutani Shizuku is a grade-obsessed student with no friends. Fate brings these two together to form the most unlikely pair. Haru firmly believes he's in love with Mizutani and she firmly believes he's insane.

Maria

THE VIRGIN WITCH

"Maria's brand of righteous justice, passion and plain talking make for one of the freshest manga series of 2015. I dare any other book to top it."

—UK Anime Network

PURITY AND POWER

As a war to determine the rightful ruler of medieval France ravages the land, the witch Maria decides she will not stand idly by as men kill each other in the name of God and glory. Using her powerful magic, she summons various beasts and demons—even going as far as using a succubus to seduce soldiers into submission under the veil of night—all to stop the needless slaughter. However, after the Archangel Michael puts an end to her meddling, he curses her to lose her powers if she ever gives up her virginity. Will she forgo the forbidden fruit of adulthood in order to bring an end to the merciless machine of war?

Available now in print and digitally!

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INUYASHIKI

**A superhero like none
you've ever seen, from the
creator of "Gantz"!**

ICHIRO INUYASHIKI IS DOWN ON HIS LUCK. HE LOOKS MUCH OLDER THAN HIS 58 YEARS, HIS CHILDREN DESPISE HIM, AND HIS WIFE THINKS HE'S A USELESS COWARD. SO WHEN HE'S DIAGNOSED WITH STOMACH CANCER AND GIVEN THREE MONTHS TO LIVE, IT SEEMS THE ONLY ONE WHO'LL MISS HIM IS HIS DOG.

THEN A BLINDING LIGHT FILLS THE SKY, AND THE OLD MAN IS KILLED... ONLY TO WAKE UP LATER IN A BODY HE ALMOST RECOGNIZES AS HIS OWN. CAN IT BE THAT ICHIRO INUYASHIKI IS NO LONGER HUMAN?

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FAIRY TAIL

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MASTER'S EDITION

Cells at Work! 2

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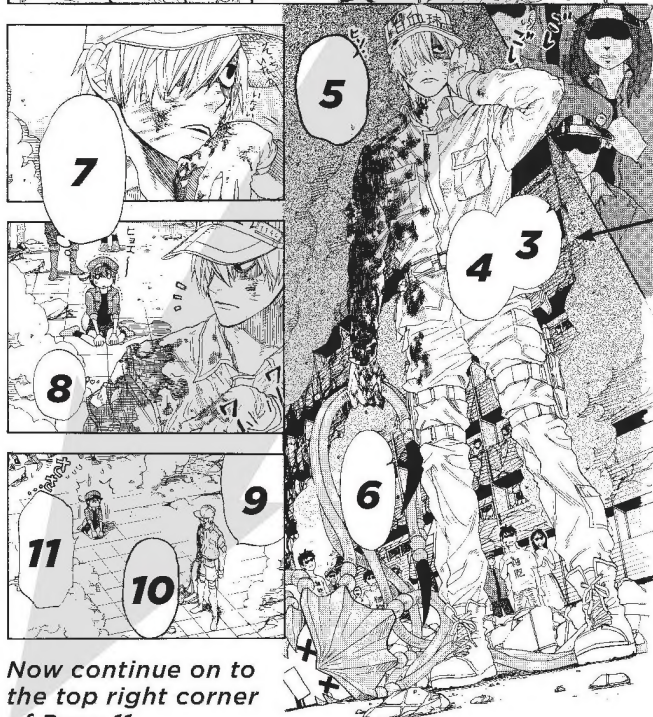
HOW TO READ MANGA

Japanese is written right to left and top to bottom. This means that for a reader accustomed to Western languages, Japanese books read “backwards.” Since most manga published in English now keeps the Japanese page order, it can take a little getting used to—but once you learn how, it’s a snap. Here’s a handy guide!

Here you can see pages 10-11 from Volume 1 of *Cells at Work*. The speech balloons have been numbered in the order you should read them in.

Page 10—read this one first!

Start here, at the top right corner of the right hand page.



Read right to left, then top to bottom. In this panel, the leftmost speech balloon comes before the one in the top left corner.

Now continue on to the top right corner of Page 11.

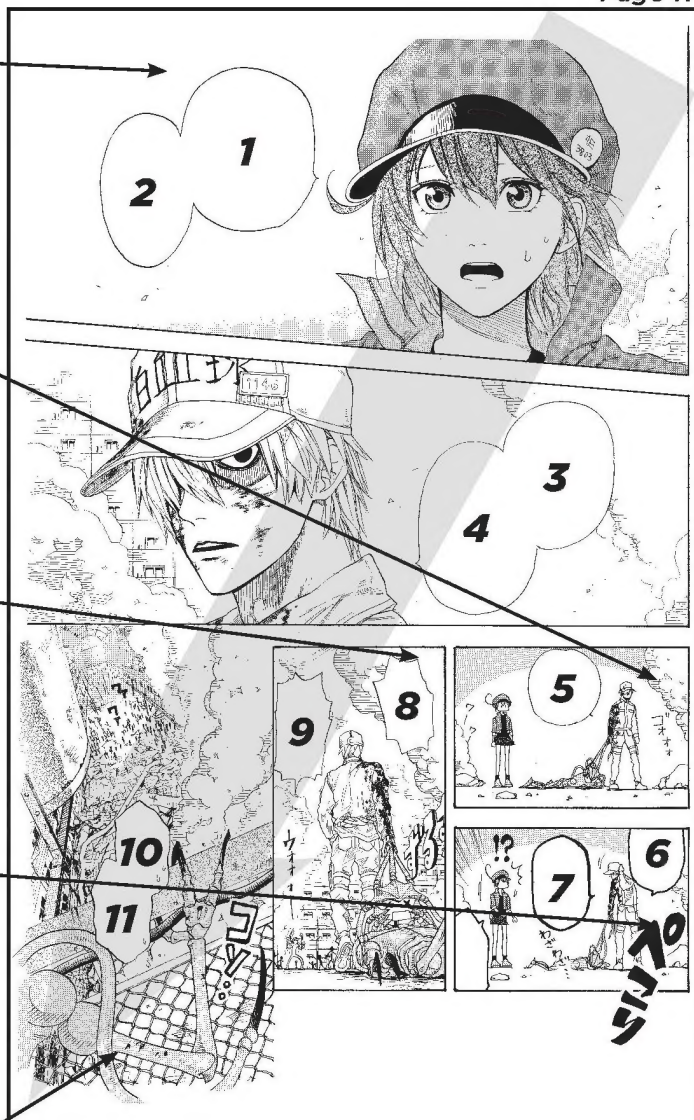
On this page,
the top two
panels are
read first.

This panel is the top
right-most after the
first two, so it's next.

If you go to this
panel next, you
would have to
move backwards
(right) to read
balloons 6 and 7.

Instead, after
reading balloon
5, you move
down to 6 and
7, then left...

...and then you
arrive at the end
of the page!



**After a few pages, you'll be reading manga
like a pro—*Japanese-style!***

止
ま
れ

(That
means
STOP)

You're about to read a *manga*—a Japanese comic—presented in its original page order, which means you start at the other end of the book. If you need a quick guide on how to read manga the way it was meant to be read, flip to the next page—otherwise, turn the book over and enjoy!